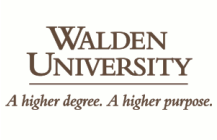

2017

Health, Wellness, and Ecological Impacts of Horse Therapy for Special Needs Children

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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2017

Abstract

Health, Wellness, and Ecological Impacts of Horse Therapy for Special Needs Children

by

Jennifer Suzanne Sulkowski

BS, Cornell University, 2009

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

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Abstract

The benefits of horse therapy for special needs children have been documented for centuries, but direct experience and perspective from special needs children and their families involved in horse therapy are missing from the literature. The purpose of this study was to enhance understanding on the health, well-being, and ecological impacts of horse therapy for special needs children, and to demonstrate how horse therapy aligns with public health, by interviewing 8 special needs families who utilize the therapy, 8 adults who underwent horse therapy as children, and 12 ecological experts in local communities. Data were hand-coded and organized based on the phenomenology of the horse, the ethnography of horse and horse therapy culture and environment, and grounded theory to explain how and why horse therapy works. All 16 horse therapy participants with diverse challenges and limitations reported a successful experience with concrete changes in health and/or well-being as a result of horse therapy; all 12 ecological experts endorsed horse therapy centers as beneficial fixtures within the communities, despite obvious challenges, such as funding, in running them. Horse therapy can be used to help and support a wide-range of special needs families; horse therapy centers are beneficial assets to local communities and their public health programs. With respect to the social change implications of this study, the information can be used by community members (e.g., doctors, health professionals, occupational therapists, families) to better understand horse therapy and its benefits for special needs children. In an attempt to improve access and promote horse therapy as a viable public health initiative, a basic blueprint for horse therapy center start-up operations has been provided for local communities.

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Dedication

To Rivaldo, the horse of a lifetime.

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Chapter 1: Introduction to the Study

Introduction

According to the Centers for Disease Control and Prevention (CDC; 2014), one in six children in the United States suffer from a physical, mental, psychological, or neurological condition that classifies them as *special needs*. Medical and therapeutic care and support for special needs children can be expensive, costing families approximately $20,000 a year or more per affected child compared to families caring for healthy children (CDC, 2014). The emotional and daily challenges families undergo while caring for, supporting, and encouraging special needs children can be an even bigger burden, primarily because supplemental family-oriented health and support services are not comprehensive and can be difficult to access (Friend, Summers, & Turnbull, 2009; Nimer & Lundahl, 2007). Many public and private health services and therapies available for special needs children focus on treating children in a hospital, specialty clinic, or highly regulated and controlled environment, which can be a frightening experience for children. Additionally, the treatment does not always translate into progression or improvement when the children return to their normal social environment at school or within the family home (Benda, 2011; CDC, 2014; Hallberg, 2008; O'Haire, 2013; Ward, Whalon, Rusnak, Wendell, & Paschall, 2013).

Many special needs children possess a range of extraordinary skills and abilities atypical of other children, which can be fostered and encouraged under the right medical treatment, social support, public health initiatives, and therapeutic services to help them adapt (based on their impairments) and thrive (Friends et al., 2009; Hallberg, 2008; Ward et al., 2013). Forty-six percent of children with autism, cerebral palsy, and other special needs conditions test above

average intelligence and comprehension in certain areas (such as math, art, and language) compared to children without special needs (CDC, 2014; WeMedia, 2000). This is significant because most people think of special needs children as ”handicapped” in all ways (which then becomes a social handicap), when in fact, quite the opposite is true (Friends et al., 2009; Wilderness Society, 2003). For example, many children with autism and ADHD struggle to conform and comply with social norms and etiquette standards in school settings because they are “wired” differently, both cognitively and physiologically (O’Haire, 2013). This makes it difficult for them to learn and pay attention, but these children also tend to be gifted in certain areas, such as math, music, or science—because they are “wired” differently (Nimer & Lundahl, 2007).

Doctors and families often struggle to communicate with a special needs child because the standard way to communicate does not align with the special needs way of communicating. The traditional approach is to aggressively treat autistic or cognitively-impaired children and help them cross these barriers to learn to communicate and interact within culturally standardized communication norms. While it is important to teach children to communicate “normally” and help them overcome physical and mental challenges to make social integration easier, taking that sole approach (which may involve high doses of medications with debilitating side effects) often prevents special needs children from reaching their full potential in the world that makes the most sense to them (Ta Vallaei & Abu Talib, 2014). This is why it is especially critical that these children receive the care, understanding, and alternative treatments they need to cultivate their raw talents and reach their full potential on their own terms, in congruence to their unique way of being and thinking (Ewing et al., 2007; Friends et al., 2009; Hallberg, 2008; O’Haire,

2013; Ward et al., 2013). It is also important for public health initiatives to be designed in support of these types of personalized and adaptive treatments for special needs children. According to Oldham et al. (2006), families with special needs children struggle to provide adequate care and support for them regardless of their socioeconomic status. This is primarily because caring for special needs children is extremely time-consuming and expensive (Health Resources and Services Administration [HRSA], 2011).

Families with special needs children often struggle financially because at least one parent is required to stay home full-time to provide continuous childcare (and therefore, the family does not have sufficient income) or specialized caregivers must be hired, which can be expensive (Oldham et al., 2006). Furthermore, insurance does not cover all medical expenses or help to fund many essential nonmedical support needs for special needs children (such as adaptive transportation vehicles with wheelchair capabilities or specialty home care equipment like ramps, emergency intercoms, and bed lifts). These families often pay substantial amounts of money out-of-pocket just to care for their special needs children in basic ways, which places them at an economic (and emotional) disadvantage (Heller, 2016; HRSA, 2011). Consequently, the majority of special needs families struggle to provide the financial, physical, and emotional support for their special needs children on their own, and this a predicament that becomes especially aggravated when relevant public health programming and services are either unavailable or inaccessible to them (HRSA, 2011).

Another problem with current special needs services and support programming in both the public and private sectors is that many traditional medical treatments and therapies used to treat special needs children involve specialized doctors or prescriptions. As previously

mentioned, these types of treatments and therapies are not always accessible, comprehensive, or relevant outside of a clinical setting. Additionally, up to 65% of children seen by health care and child care providers under state funded child care initiatives are reported as undiagnosed or misdiagnosed with special needs afflictions (HRSA, 2011; Oldham et al., 2006). This is partly due to the fact that many emotional and mental health afflictions fall upon spectrums that vary widely in severity, and symptoms and can also be aggravated by external factors, which makes many cases difficult to identify and treat. Consequently, there are thousands of cases of special needs children under 18 years of age who are misdiagnosed or not diagnosed (HRSA, 2011; Oldham et al., 2006; Riva, 2016). When the wrong types of medications or clinical therapies are prescribed (or when nothing is prescribed at all), there is a risk of causing more harm than good, especially when public health programming does not provide nonclinical assistance. Families struggle to care for children when doctors and clinical therapists have turned them away after prescriptions and clinical therapies have proven ineffective (Heller, 2016; Riva, 2016). Lack of research and curtails in medicine and technology limit doctors' abilities to diagnose and treat, which consequently, may not support families' needs (Heller, 2016). However, there is potential in public health programming and services that can supplement (and even override) current privatized and technological limitations, and help special needs children and their families from becoming lost to the system (Riva, 2016).

Through alternative therapy, there are a variety of successful and effective ways to help and support all types of special needs children and their families. These interventions function without the use of prescriptions or rigid clinical therapies, which are often proven to be ineffective in home and school environments where children spend a majority of their time.

Many special needs children benefit physically, mentally, and emotionally and experience a better overall quality of life with the help of prescription medications and clinical therapies; however, regardless of a special needs child's health status and stability, public health can further assist these children and their families with more supplemental programming (Heller, 2016; Riva, 2016). Friends et al. (2009) found that even the most basic public health support programs offering alternatives to medications and clinical support for families caring for high needs children (which are often undiagnosed special needs children) and formally diagnosed special needs children (where medications and clinical therapies were either ineffective or not enough) helped families feel better supported and less burdened, while improving overall wellbeing for the children.

Animal-interaction therapy is one of these types of alternative therapies that is open to the public and can benefit special needs families of virtually any type. Animal-interaction therapy is an emerging and revolutionary healing and rehabilitating treatment for all types of special needs individuals regardless of whether or not they have been officially diagnosed (Wilson, Buultjens, Monfries, & Karimi , 2015). Animal-interaction therapy has been proven to be comprehensive and holistic in its approach to helping special needs children (of any condition), it is highly effective, and a formal prescription or referral is not required (Gabriels et al., 2012; Hallberg, 2008). Animal-interaction therapy allows special needs children to bond and interact with animals in their own ways without receiving judgment or feeling pressured to make social adjustments, while working through physical, emotional, psychological, or mental challenges related to their conditions (Dilts, Trompish, & Bergquist, 2011; Dingman, 2008; Hallberg, 2008; Heimlich, 2001). The calming and soothing effects of animals among special needs individuals

have been documented since the 18th century (O'Haire, 2013). Within the last 40 years, scientists have found that animal-interaction therapy actually improves motor-skills, speech, calmness, social skills, cognitive development, and overall mobility for special needs children and reduces or eliminates the need for medications (Granados & Agis, 2011; O'Haire, 2013; Smith-Osborne & Selby, 2010; Ward et al., 2013).

Background

Conceptually, animal-interaction therapy is thought to produce positive health and wellness for special needs children because animals are naturally therapeutic, and they meet and interact with children on their own terms (Dingman, 2008; Hallberg, 2008). Animals are calming, friendly, nonjudgmental, soft, quiet, and they naturally respond and provide clear and understandable stimuli and reactions that special needs children understand and relate to (Ainslie & Ledbetter, 1980; Gabriels et al., 2012; Hallberg, 2008; Ward et al., 2013). Animals provide a range of emotional stabilities and forms of love and acceptance that are often unobtainable from other humans on a regular basis, even though they are needed or sought after on a primal level by each individual for wholeness and content (Ainslie & Ledbetter, 1980; Benda, 2001; Hallberg, 2008). The desire for understanding and common ground can be even harder for special needs children to obtain from "normal" individuals who often expect a special needs child to adapt to societal norms (Hallberg, 2008). Animals do not discriminate and they are highly and readily adaptable. They accept and understand everyone, and this is the basis for animal therapy. Animal-interaction therapy operates within a quiet, harmonious, constructive environment (which is just as necessary for the children as it is for the animals), and this provides special needs children with the opportunities to establish and improve confidence, self-esteem, social

skills, bonding abilities, communication, and human interaction (Dingman, 2008; Hallberg, 2008). It is thought that over time, immediate benefits of animal therapy are sustained within special needs children as they grow more experienced and confident working with the animals, and this helps them maintain a consistency in overcoming their challenges and cultivating their talents, long-term (Hallberg, 2008). This, then, translates into an overall improvement in health and wellness.

The use of animals for therapy, in general, is thought to be especially effective for certain types of special needs children (for example, those with severe forms of autism, those who feel embarrassed or are depressed by a physical limitation, or those who have been through an unspeakable trauma) as an alternative therapy, because it removes the need for oral communication (Granados & Agís, 2011; Hallberg, 2008). Animals interact and react to children based almost entirely on physical and emotional communication, which encourages both the child and the horse therapist or therapeutic riding instructor to focus therapy efforts on physical and psychological skills, without forcing children to engage in a potentially uncomfortable or impossible oral or expressive communication (Ewing et al. 2007; McCormick & McCormick, 1997). When the pressure to orally communicate is relieved, special needs children with speech impairments or apprehension are more at ease, and therefore, become better at expressing themselves in the ways that they are able, which animals can sense and respond to, in sequence (Hallberg, 2008).

It is also important to note that in this paper, the term *special needs* is not meant to label or define children with impairments or challenges that affect their ability to live, grow, and/or thrive. The term is also not meant to negatively compare children with impairments and/or

challenges to children who do not face impairments and/or challenges. Instead, special needs is used here as a term to refer to any child (or adult) facing a disability, a hardship, a challenge, an illness, a tragedy, or a difficult situation for any length of time. There is an infinite array of circumstances that might qualify someone as special needs, ranging from any type of physical and/or mental limitations and/or impairments to psychological traumas to permanent or temporary struggles with self-esteem issues, anxiety, hurt feelings, and shyness, for example. As world-renowned horse therapy expert Eva Lund stated, "At many points throughout our lives, we are all special needs" (personal communication, 10 August 2015). Therefore, it is important to note that this study, which repeatedly uses the term special needs, is referring to anyone who is dealing with an extraordinary, challenging, and/or difficult circumstance. The term special needs is not intended to limit or offend, but rather, to signify a universally common state and to encompass and potentially apply to anyone who may benefit from information on a specific type of animal therapy discussed here—a therapy which is intended to offer healing, growth, exploration, relief, and empowerment for dealing with difficult life circumstances and overcoming the challenges or barriers those circumstances pose.

Dogs are common therapy animals in hospice and hospital settings because they are small and portable, but horses are often the farm therapy animals of choice because they are so versatile for therapy needs. Therapies with dolphins, llamas, and zebras are offered in select locations worldwide, but horses are naturally domestic, which means they are easily kept, they are friendly, and they are easily and quickly trained for safe handling (Granados & Agís, 2011; Hallberg, 2008). Horse therapy, in particular, provides a wide breadth and scope of special needs therapies and rehabilitative activities (Burgon, 2011; Granados & Agís, 2011; Rosen,

2001). A key advantage of horse therapy is that it takes place outside of a clinical setting, meaning it is extremely accessible (provided families know about it), relatively affordable, and can occur casually and informally, through independent farm visits without a prescription from a doctor (McCormick & McCormick, 1997). Horse therapy barns are public places; anyone can access the therapy and many certified horse therapy barns offer unofficial community initiatives for special needs families that cannot afford to pay for the therapy out-of-pocket. From an ecological perspective, horse therapy centers incorporate trained horses, pastoral land, and well-equipped farm facilities, which means horse therapy can create new avenues and beneficial opportunities for farming, conservation, and animal husbandry, all of which offer important ecological benefits that ultimately impact public health (Chardonnens, 2009; Jump, 2015).

Horses are sensitive, perceptive, and emotional, by nature (Ainslie & Ledbetter, 1980; Hallberg, 2008). The greatest advantage in using horses as therapy animals is that children can interact with them on the ground or on their backs; both situations offer varying degrees of exercise, freedom, independence, connection, learning, education, and experience. Horses readily exhibit friendliness and bond with people relatively quickly and clearly; horses can adapt to many different forms and ways of communication, depending on the child, and in return, the horses respond and reciprocate through touch, sound (nickers), body language (such as ears intently flicked forward/toward the person working with them), and obedience (in ground work and riding; Ainslie & Ledbetter, 1980). Therefore, special needs children receive immediate responses and gratification, which improves their confidence and quickly builds relationships and trust (Hallberg, 2008). As horse therapy participants learn more about the horses they are working with over time, and as they desire to expand those relationships through increased

activity, their comfort level, learning, and capabilities expand in stride (McCormick & McCormick, 1997).

In this way, a formally nonverbal or hesitant child may eventually be coaxed into verbalization when clucking or kissing at the horse becomes a necessary cue to coax the horse into a trot. Likewise, softly speaking the word *whoa* (instead of harshly pulling on a horse's mouth with the bridle) is a standard and necessary riding procedure to gently slow a horse down when there is an unwanted increase in the horse's pace (Hallberg, 2008). Horses also provide physical stimulation for children (Hallberg, 2008). Atop a walking horse, a child gains the sensation of walking independently, which provides natural muscle stimulation and improves balance (Granados & Agis, 2011). For example, a child with cerebral palsy slowly gains strength while riding, while also experiencing feelings of walking independently and gaining freedom provided by the horse beneath him. It is believed that the desire to improve as a rider and grow in a relationship with the horse are what stimulate a child with cerebral palsy (or another physical or mental/cognitive challenge) to work through and overcome some of the physical and mental/cognitive impairments of his or her condition (Granados & Agis, 2011; Hallberg, 2008).

Problem Statement

The problem is that very few direct accounts from special needs children and their families have been published in qualitative studies that directly describe their experiences with horse therapy and its perceived impact on health and well-being in a scholarly and widely-accessible manner (Gabriels et al., 2012; Granados & Agís, 2011; Nimer & Lundahl, 2007; O'Haire, 2013). The ways in which horse therapy translate into perceived health benefits for

special needs children and their families from the perspective of special needs children and their families are not well-documented in the literature, nor has the potential of horse therapy centers as public health initiatives been properly considered or explored (Granados & Agís, 2011; O'Haire, 2013; Ward et al., 2013). Researchers have conducted quantitative and clinic studies on horse therapy for children, and adults suffering from various physical problems, mental illness, and trauma have been conducted, but direct perspectives and experiences from special needs children are often missing (Gabriels et al. 2012; O'Haire, 2013).

The physical, mental, emotional, and psychological benefits of horse therapy are consistently highlighted in the literature, but without recorded perspective and experience from the children it is designed to help, it is impossible to fully understand the scope of the therapy's advantages and disadvantages, in terms of health and well-being (Gabriels et al., 2012; Granados & Agís, 2011; Nimer & Lundahl, 2007; O'Haire, 2013). Another key theme in the literature on horse therapy is that special needs children are not *disabled* in the literal sense, nor should society treat them as though they are less or unable to contribute as productive citizens (Granados & Agís, 2011; Nimer & Lundahl, 2007; O'Haire, 2013). Instead, accredited and experienced horse therapists and therapeutic riding instructors view special needs children as individuals who are dealing with a set of physical, mental, emotional, and psychological challenges, which horses – through supplemental therapy – might help them overcome (Equine Assited Growth and Learning Association [EAGALA], 2010; Professional Association of Therapeutic Horsemanship [PATH], 2015).

Researchers have found that these children are otherwise capable in alternative ways, given the right help, support, and environmental factors necessary to help them overcome the

challenges they face, improve their health and well-being, and express themselves (Dingman, 2008; Gabriels et al., 2012, Granados & Agis, 2011; Hallberg, 2008). However, it is difficult to know what "help and support" for these children involves if their input and experiences are never documented (Gabriels et al., 2012). Finding out more about the direct experience of special needs children on the very horse therapy designed to help them will help health professionals (specifically those involved with horse therapy) to better understand, develop, refine, cultivate, and recommend the therapy, so that it is most beneficial (and the least detrimental) to the children and their families who so heavily depend on it as a supplemental health and wellness therapy (Granados & Agís, 2011; Nimer & Lundahl, 2007; O'Haire, 2013).

Not all special needs children are able to provide traditional oral feedback (McCormick & McCormick, 1997). However, there are alternative ways for children to express themselves (for example, through sign language or drawings, translation from their horse therapists and families who know them best, and even through the observation of their therapy horse's body language; Hallberg, 2008). Although these may not be traditional or standardized data collection methods (specifically in a quantitative sense), they do align with exploratory parameters of qualitative research (Creswell, 1998). Furthermore, the quest to document the child's perspective (through their families), regardless of the medium it comes in, and to see such input as valuable, aligns with an ethical obligation to science and medical-based therapy to assure that treatment is comprehensive and our knowledge on its application is exhaustive (Creswell, 1998). This obligation can be met by collecting the perspective and experiences of willing special needs children (with the permission of their families) involved in horse therapy, as well as adults who

underwent horse therapy as children, and having their accounts presented and recognized as primary data.

Literature on the immediate impacts of the therapy, as they relate to the health and well-being of the child (and the way in which that impacts the rest of their family), from the perspective of the children (and/or the children's families) is missing (Gabriels et al., 2012; Granados & Agis, 2011; Nimer & Lundahl, 2007). Seeking the experiences of special needs children (and their families) involved with horse therapy provides them with a formal voice and the ability to enhance understanding on the very therapy (and its corresponding theories) designed and desired to help them. Their perspective also enriches our professional understanding about these children (for they are considered "vulnerable") and how they can continue to be helped, supported, and empowered by horse therapy (Dingman, 2008; Hallberg, 2008). Ultimately, the purpose of this information is to provide parents, therapists, clinical and public health professionals, and local communities with insight on how to better serve these children with horse therapy-related programs, activities, specialized staff, and accessibility to horse therapy centers.

However, even with that information, a formal list of the ecological/environmental factors horse therapy centers require from local communities (and their subsequent impacts) is not currently available. If a basic framework of factors for implementation can be collected and produced, local community wellness and farm initiative officials can utilize the study as a blueprint and a justification for the facilitation of horse therapy as an official and widespread public health initiative, which may encourage local investment in farm operations to increase horse therapy accessibility for special needs children (Jump, 2015). Documenting the ecological

impact of horse therapy was an important aspect to this study; an understanding of the ecological perspective is needed in order to facilitate the desired impacts of the therapy as it affects special needs children and their health and well-being (Jump, 2015).

Purpose of the Study

This study has two complementary parts. The first purpose of this project was to collect direct experiences from adults who underwent horse therapy as children and special needs families currently involved in horse therapy, analyze how those experiences affect health and well-being, and disseminate the resulting study to doctors, therapists, and other special needs families (not currently utilizing the therapy) at the community level. The second purpose was to collect information on how to support and sustain horse therapy experiences in local communities and translate them into feasible public health initiative proposals by gathering an ecological perspective (relating to local economics, environment, and community enrichment opportunities) of the therapy, itself (Granados & Agís, 2011; Jump, 2015).

Theoretical Framework

Granados and Agís (2011) explained that horse therapy theory is conflicting and difficult to define because therapy horses are versatile, and special needs children are diverse in their needs. Therefore, the strategy (which is driven by theory) in which horses are used in rehabilitation depends on the diagnosis and needs of each participant (EAGALA, 2010; Grandados & Agís, 2011; O'Haire, 2013; PATH, 2015). However, the type of application of horse therapy that best fits a child's needs can be determined by three broad theories (although there are many hybrid therapies and interchangeable therapy types, terms, and definitions): hippotherapy, therapeutic riding, and equine-assisted psychotherapy (Grandados & Agís, 2011).

Hippotherapy is basic; the motion and mobility of the horse are used to influence the participant (who is mounted) by fostering physical reactions. For example, a child with cerebral palsy may experience an increase in core strength and motor skill coordination due to the physical stimulation and rhythm caused by the movement of the horse (Gabriels et al., 2012; Granados & Agis, 2011). Modern hippotherapy involves the use of horses for mobility and physical stimulation, as well as psychological and emotional support (Granados & Agís, 2011). An autistic child may learn to talk by cuing the horse to slow down its motion with simple cooing or "whoaing" sounds. This basic engagement between the horse and the horse therapy participant facilitates speech development. Modern hippotherapy is often utilized as a form of physical, occupational, or speech therapy (American Hippotherapy Association, 2010).

Equine-assisted psychotherapy uses horses to create experiential circumstances in the form of activities, tasks, and challenges for special needs, troubled, mentally-ill, or self-improvement seeking participants. The experience of working with horses causes clinical issues to surface and be addressed by the participant, with the help of the horses and the team of horse therapists (EAGALA, 2010; Granados & Agís, 2011). For example, in equine-assisted psychotherapy, a child with Asperger's syndrome may be asked to help "tame" and gentle a "wild" horse, which requires the child to "tame" and gentle his or her own behavior so that the horse, in turn, also tames and relaxes.

Therapeutic riding is a "grayer" theory because it is a more independent, less "hands on" therapy (meaning fewer volunteers and side-aids are needed to help participants), even though it may still involve a combination of hippotherapy, equine-assisted psychotherapy, and/or simple groundwork (American Hippotherapy Association, 2010). Therapeutic riding is considered to be

more of a "riding lesson" and teaches relevant riding skills to participants, as opposed to hippotherapy or equine-assisted psychotherapy, which focus on components of horse movement and behavior, but do not usually incorporate or emphasize aspects of horsemanship or teach deliberate riding disciplines beyond what is required to observe and honor standard horse safety procedures (American Hippotherapy Association, 2010). Therapeutic riding is often pursued by aspiring riders as a recreational way to build physical strength and/or mobility, develop confidence, or to experience another health or wellness skill that can be fostered through work with horses (American Hippotherapy Association, 2010). However, a certified therapeutic instructor is still teaching the lesson, and volunteer safety or ground-aids may still be available for assistance.

Therapeutic sessions or riding lessons are more focused on teaching actual riding and/or horse skills, whereas in hippotherapy and equine-assisted psychotherapy, riding and/or groundwork is simply incorporated into overarching exercises that purely focus on increasing and improving mobility, cognitive function, and/or emotional stability for each participant (American Hippotherapy Association, 2010). It can be argued that therapeutic riding partially falls under the category of hippotherapy, and while many horse therapy centers often make the distinction in their lists of services offered, many practicing certified horse therapists at licensed horse therapy and therapeutic riding centers incorporate elements of all three types of theories/approaches into a single session for a comprehensive experience for each participant (American Hippotherapy Association, 2010; Granados & Agís, 2011; Hallberg, 2008). However, it is important to note that equine-assisted psychotherapy – on its own – is specialized

for work with participants and horses from the ground. Participants are rarely (if ever) mounted (EAGALA, 2010).

Granados and Agís (2011) and Hallberg (2008) explained that the application of these theories produce improvements in physical and mental health for special needs children based on the following physiological principles and theories: dynamic systems theory, neuronal group selection theory, sensory integration theory, experientialism, traditional psychotherapy, and Gestalt psychological theory. However, most accredited therapeutic riding and horse therapy organizations provide therapy based on the needs of each participant using forms of hippotherapy, therapeutic riding, and/or equine-assisted psychotherapy (which may be listed under interchangeable and/or alternative terms, depending on the program and/or the therapy center) to stimulate physiological and/or psychological healing and growth (EAGALA, 2010; PATH, 2015). The Canadian Therapeutic Riding Association (CanTRA; 2016), PATH (Professional Association of Therapeutic Horsemanship International; 2015), and EAGALA (Equine Assisted Growth and Learning Association; 2010) are three of the world's leading therapeutic horse organizations and horse therapy models. Together, they encompass modern horse therapy, with the specialization and ability to treat special needs, troubled, and mentally-ill children (and adults) suffering from a wide-array of afflictions, including cases that have not been clinically diagnosed or identified. Studies on the ecological impacts of horse therapy centers for local communities are almost non-existent in the literature (Jump, 2015). However, a system's theory approach provides a model for exploration and analysis of key ecological factors of horse therapy centers in local communities as they relate to public health on a broader scale;

these factors include environment, land management, economics, horse welfare (animal husbandry), and conservation (Laureate Education, Inc., 2010).

Research Questions

The foundation for this qualitative, observation-based study was community-based participatory research, where participants had a voice and the opportunity to be highly involved (as they choose) with the research, having full freedom to offer their experiences, concerns, and hopes about the therapy, as it relates to the children, adults who underwent horse therapy as children, ecology experts (consisting of therapeutic riding instructors, equine specialists, licensed therapists, horse trainers, and/or trained volunteers, as well as local farmers, tradesman, and local communities with horse-related businesses), special needs families, and the environment (Fink, 2000).

Qualitative research questions included:

RQ1: What are the physical, mental, and emotional experiences (as they relate to horse therapy) of children and their families who are involved in horse therapy?

RQ2: What are the health and wellness effects special needs children experience as a result of their horse therapy session(s)?

RQ3a: Do special needs children/families associate horse therapy with changes in health and well-being?

RQ3b: If so, what specific factors are positively and/or negatively associated with health and well-being for special needs children who undergo horse therapy?

RQ4: What are the ecological requirements, implications, and public health potential of horse therapy centers, specifically in terms of environment,

economics, land management, community development, and horse therapy administration?

Nature of the Study

Qualitative data collection methods involved interviews with adults who underwent horse therapy as children, the parents/guardians of special needs children currently involved in horse therapy, and local ecology experts. The study sample consisted of eight adults who underwent horse therapy as children, eight parents/guardians of special needs children (between the ages of three and 17 years old) who were involved in horse therapy at certified therapy centers across North America, and 12 ecology experts who answered questions on horse therapy as it relates to economics, environment, community development, land management, and horse therapy administration.

One of the major overreaching themes in the literature on horse therapy for special needs children is the "mystical," intrinsic, or supernatural bonding phenomenon that seems to occur between the individual and the horse, which translates into therapeutic growth and healing (O'Haire, 2013; Ward et al., 2013). Phenomenology is used to explain and summarize the experiences (the "essences") of horse therapy, as it affects special needs children (from their perspective as adults), special needs families, and the surrounding local ecology (Creswell, 1998; Patton, 2002). Ethnography is used to account for and explain the cultural components of the phenomenon, including the exposure to horses, the local community where the therapy takes place, and the general "farm/barn" culture that exists at the therapy site (Creswell, 1998; Patton, 2002). The grounded theory allows for the organization and synthesis of the data into a structured, "clinically-explained" model or theory in the dissemination stage of this dissertation,

which outlines the way in which the therapy works, as a phenomenon (from the perspective of individuals involved with horse therapy as children and special needs families currently involved in horse therapy). Grounded theory is also used to summarize and structure the factors required to facilitate horse therapy as a public health initiative and its resulting impact. The purpose of the grounded theory is to provide readers with a tailored and "professional" compilation of information (in the form of a model) on horse therapy from the perspective of children, local ecology, and a public health systems thinking approach, which has been previously unexplored and is, therefore, lacking in the literature (Creswell, 1998; Laureate Education, Inc., 2010).

Concepts and Definitions

Changes and effects in health and wellness in horse therapy: The terms *health* and *wellness/well-being* in this study are broad. The literature review discusses three primary areas of health and wellness in which horse therapy might change or affect: the physical state, the mental or cognitive state, and the psychological state, though it is possible that (for example) horse therapy intended to improve mobility for a child with spasticity may also improve that child's confidence or self-esteem (Hallberg, 2008). In this way, horse therapy may change or affect multiples areas of health and wellness, as observed and/or experienced by a child or a parent. Horse therapy is an alternative therapy, and this was a qualitative study intended to investigate the experience of special needs children and their families. Therefore, changes or effects in health and wellness for special needs children may be dependent on experience and personal observation or discretion (Granados & Agís, 2011). For example, some parents enroll their special needs child in horse therapy purely for physical stimulation and that is their primary objective in terms of health and wellness. Other parents expect little improvement in mobility

but have chosen horse therapy for their child as a way to boost morale, foster family bonding time, or improve confidence or feelings of independence. Although these effects may lack concretion or physicality, they still contribute to overall health and well-being (Ward et al., 2013). Similarly, a young child may only view horse therapy as "fun" (which is often why it is so successful) and notices nothing else, but it may be the observant parent or horse therapy team member who notices a physical change in self-carriage or core strength for that child (Gabriels et al., 2012). Perceived changes and/or effects in health and wellness as a result of horse therapy are often relative (within groups), but notable, valid, and relevant, nevertheless (Gabriels et al., 2012). Because perception regarding changes and effects in health and wellness are dependent on personal experience and may differ among members of the same group, the terms "health" and "wellness" are presented openly and broadly, without specific solicitation or measurement parameters, in order to prevent any limit in scope, range, or breadth in observation and self-reporting (from interviews). Perception of effects or changes in health and wellness as a result of horse therapy were the primary notions being sought after in this study. It is also important to note that there was no discrimination in the types of special needs cases included in this study. Horse therapy is believed to be comprehensive and effective for children experiencing a wide range of special needs circumstances (Dingman, 2008; Hallberg, 2008; Wilson et al., 2015). There are many families who may access it for their children without official diagnoses, so differentiating between cases and conditions with respect to health and wellness effects (reported, as a result of the therapy) is not relevant information with respect to the research questions, though the conditions of participants are anonymously disclosed as supplementary

information at the discretion of the reader (Dingman, 2008; Gabriels et al., 2012; Oldham et al., 2006).

Ecological factors and implications: This term refers to the environmental, economic, land management/stewardship, and community enrichment (or detriment) aspects (both input and output) of horse therapy centers, as they affect local communities, and public health, in general (Jump, 2015).

Groundwork: Not every horse therapy participant wishes or is physically able to ride, but there are many activities participants can engage in with horses from the ground, and this is referred to as groundwork (Hallberg, 2008). For example, participants may walk with horses (either by foot or using a wheel chair) and coax the animals through a series of challenging obstacles. Participants may also be invited to contribute to horse training (through the teaching of tricks, like laying down on command) or help care for the horses from the ground. Activities in this manner might include grooming, bathing, cleaning stalls, or feeding, and they are incorporated as a regular part of therapy, as the horse therapy teams see fit (Hallberg, 2008).

Horse body language: Horses are highly sensitive creatures, and they exhibit a range of behaviors and body language that reflect how they are feeling as a result of the person or participant working with them (Ainslie & Ledbetter, 1980). For example, calm horses with relaxed eyes, methodical breathing, and at least one ear turned toward its rider reflect a calm, relaxed, and engaged rider (or participant). Nervous horses may spook, shiver, or breath abnormally, suggesting the rider is nervous, unhappy, scared, or in pain (Ainslie & Ledbetter, 1980). Pinned ears, or ears laid flat against a horse's upper neck, indicate anger, hostility, or unhappiness, which suggest the rider may be feeling this way, too, and in the process, may also

be hurting or annoying the horse (Ainslie & Ledbetter, 1980). When horses recognize or share a bond with individuals and share positive experiences interacting with them, the horses may nicker or whinny in fondness, rub on the person affectionately, lick their muzzles (nose and lips), or remain in close proximity to the person, even when free to roam (Ainslie & Ledbetter, 1980). Alternatively, horses that do not like an individual may bite, kick, or flinch at their touch. Therapy horses are specifically trained not to exhibit harmful behaviors like kicking or biting, but flinching and ear pinning are clear signs of a horse's unhappiness or mistrust under any condition. If a participant is mistrustful of his or her horse, the horse naturally becomes mistrustful of the participant (Hallberg, 2008). In this way, it is also possible to monitor a therapy horse's physical, mental, and emotional state through his or her interaction with the participant and members of the horse therapy team. For example, if a horse becomes "busy" by nudging his or her handler, frequently stopping, walking faster than the established pace, or swishing his or her tail, this could suggest the horse is bored or unhappy (which may suggest a disengaged participant), excited or happy to be worked (which may suggest an excited or happy participant), or is simply inexperienced with his or her job (Hallberg, 2008). Each horse therapy horse handler is aware of the horse's personality and history, and this information can then be compared and contrasted to diagnose the horse's feelings and how they may be impacted by the physical, mental, and emotional state of the participant (Hallberg, 2008).

Horse therapy: Horse therapy consists of a series of therapeutic interactions and activities that horses and participants engage in together, as supervised by a team of licensed clinical, speech, and/or occupational therapists; specialized horse therapists; therapeutic riding instructors; nonspecialized riding instructors; psychologists; psychiatrists; horse experts; and/or

trained volunteers. For the purpose of this study, horse therapy is referred to and has been applied using the theories and methodologies of hippotherapy, therapeutic riding, equine-assisted psychotherapy, and/or other related approaches to riding and groundwork with horses for the purpose of healing, growth, rehabilitation, relief, and/or self-improvement for participants. Activities tend to focus on physical, emotional, or psychological connections between horses and participants (Granados & Agís, 2011). Horse therapy is still a relatively new field composed of many types of theories, subtherapies, approaches, and models. Depending on the center and the region, names and definitions are often different, but share common meaning and principles. There are certain experts who consider "horse therapy" to strictly involve hippotherapy or equine-assisted psychotherapy, leaving therapeutic riding as an entirely different entity. However, for the general public and nonexperienced equine professionals (who are the primary audiences of this paper), those distinctions are impossible to recognize and it makes the information overly-complicated and unnecessarily detailed. The underlying principle for using horses as a means to promote better physical, mental, and emotional health in humans is the fact that horses are therapeutic. Therefore, for the sake of common understanding, convenience, and simplicity, the term "horse therapy" in this study is used to describe any type of application of horses and horse instruction intended to directly help and improve the health and well-being of humans, as that is a direct definition of therapy.

Horse therapy teams and/or team members: Horse therapy teams are certified/qualified human healthcare and/or horse professionals and volunteers with organizational accreditation, experience, and hands-on horse experience and expertise (PATH, 2015). Teams are often composed of therapeutic riding instructors, psychologists, equine-assisted mental health

specialists, clinical therapists with equine-assisted expertise, equine specialist-horse therapists, horse trainers, and/or trained volunteers. Certified horse therapy team members are specially trained to work with humans and horses together by leading and coaching them in safe, engaging exercises that focus on enhancing a particular skill or addressing a particular problem for the participant (EAGALA, 2010). For example, a therapeutic riding instructor might help a rider improve her motor skills by encouraging her to steer her horse through a series of cones with her hands and legs. Similarly, a child suffering from a psychological trauma might be guided in bonding exercises with a horse as supervised by an equine-assisted mental health specialist, who aims to help the child build a strong enough bond with the horse so that he eventually feels comfortable enough to close his eyes while trotting atop the horse, thereby addressing an issue he may have in trusting others.

Horse therapy centers/farms: Horse therapy centers and/or farms/ranches are facilities with certified therapy horses, qualified horse therapy teams, horse handlers, and the proper equipment and spaces conducive to horse therapy, such as riding arenas, obstacle courses, pasture for the horses, safe observation and interaction areas for participants, horses, and their families, and the proper resources for horse and participant care and management (such as emergency access to doctors and veterinarians and facilities with wheel-chair accessible areas, for example; EAGALA, 2010; PATH, 2015). They are typically public facilities, meaning that even with private owners, they offer public services accessible to anyone interested in trying and/or experiencing the services and programs they offer. Horse therapy centers can exist in barns, on farms, on ranches, or even in designated lots in urban areas.

Riding: Riding, in horse therapy, is engaged in when a participant is atop a horse. This may also be referred to as "therapeutic riding." Participants typically sit on the horse in order to "ride" at a walk (or a faster gait), but participants may also lie across or even stand on horses (which is a common practice in hippotherapy), depending on the scope and type of therapy being offered. Ground support from therapy assistants may also be provided in case the participant feels unsteady or falls (Hallberg, 2008). Therefore, a participant may ride completely independently, with a therapeutic riding instructor nearby to instruct, or a participant may ride with the help of several therapy aids providing support from the ground while an occupational therapist directs a changing of physical positions for the participant atop the horse – such as sitting, crouching, and reclining, as in hippotherapy (Hallberg, 2008).

Special needs children: For the purpose of this study, special needs children are defined as individuals under the age of 18 with physical, mental, emotional, or psychological impairments or deviations from normal development, physiology, cognitive ability, and behavior (EAGAL, 2010; O'Haire, 2013; PATH, 2015). The age range in this study (ages 3 to 17) was chosen to capture a wide spectrum of ages and special needs conditions in an attempt to contribute to the literature in as thoroughly of a manner as possible.

Therapy horses: Therapy horses are domesticated, trained, and certified (in safety and ability) equines used in the therapy and rehabilitation of special needs children and their families. Therapy horses can include large and small horses of any breed. Certified therapy ponies, donkeys, and zebras are also used for rehabilitation and are referred to throughout the study by their common names (McCormick & McCormick, 1997; O'Haire, 2013).

Assumptions

The primary assumptions of this study are that the study participants (individuals who utilized horse therapy as children, families with children currently involved in horse therapy, and local environmental and ecology experts) behaved and answered normally and honestly during the interview process. It is assumed that focusing on the special needs child's and family's perspective in special needs horse therapy provides these individuals with an empowering voice and that every safety measure and precaution was taken to ensure their well-being during the study, including the assurance that informed consent was obtained.

Scope and Delimitations

Discrimination did not occur among special needs cases or the degree of severity of cases involved in horse therapy. Any adult able to provide informed consent that has undergone horse therapy as a child was eligible for the study, and all parents/guardians of special needs children between the ages of 3 and 17 were invited to participate in the study. All adult participants spoke and understood English fluently. A wide range of ecology experts were also consulted, including academic professionals (such as horse therapists and local environmental officials) and field professionals (such as stable-hands and farmers). They all spoke and understood English fluently.

Limitations

The greatest limitation of this study was that special needs children cannot be directly observed or consulted, as a result of safety and ethical concerns by the Internal Review Board (IRB), so information on the experience and perspective of special needs children involved in horse therapy can only be provided indirectly, by former-child horse therapy participants, as well

as feedback from special needs families with children currently involved in horse therapy. Recall or personal bias could be a threat. Furthermore, a deliberate analysis of the ecological impacts of horse therapy centers in local communities and as public health initiatives has never been formally attempted, based on the void in the literature relating to this topic. Therefore, it is likely that this study produced only a very basic, exploratory, nonexhaustive list and analysis of ecological factors and impacts, and that list and analysis is in relation to the first part of this study involving the health and well-being of special needs children. Many horse therapy centers also cater to special needs adults or other individuals seeking corporate-, team-building, personal growth, or purely recreational programs. The public health impacts of those centers may be very different from the centers referenced in this study; every center in every community will be different, and so, the blueprint produced in this study may not be super-imposable.

Significance

Horse therapy has comprehensive therapeutic effects that can provide much needed public health relief and benefit to special needs families burdened with the financial and time-consuming requirements of caring for special needs children, especially in terms of health and well-being (Oldham et al., 2006; Wilson et al, 2015). Grandados and Agís (2011) reported that special needs children show improvement in their sensory, skeletal, muscular, vestibular, ocular, and limbic systems as a direct result to horse therapy, in addition to experiencing psychological, social, and educational benefits that are sustained in environments outside of where the horse therapy takes place. Access to horse therapy can drastically change a child's immediate well-being by improving self-confidence, family interactions, motor skills, and social understanding, while greatly expanding the opportunity and promise for a child's future by cultivating his or her

unique gifts and talents (Gabriels et al., 2012; Nimer & Lundahl, 2007; O'Haire, 2013; Ward et al., 2013). Studying the environmental and ecological impacts of this therapy may make the therapy more accessible and affordable under public health initiatives.

Special needs family support is a community and public health endeavor (Fink, 2000; WeMedia, 2000; Wilderness Society, 2003). The information from this study could provide the justification and encouragement needed to secure community-funding initiatives geared towards special needs public health facilities, preserve and protect nature areas, and support animal husbandry and rescue efforts (the latter two of which have indirect public health applications), if the ecological impact of the centers is first understood (Jump, 2015). In these ways, social and public health change is comprehensive; the purpose of this study was to enhance understanding on special needs child health and well-being through horse therapy, while also documenting the local ecological factors and impacts of it, which could lead to a healthier, more enjoyable, and accessible horse- and health-geared environment for everyone and offer specific and deliberate public health outlets and support to special needs families in local communities. The other goal was to fill the literature gap by providing the experiences and critical input of special needs children involved in horse therapy and chronicling the ecological impact of horse therapy centers in local communities, which adds comprehensiveness to the literature, as it does not yet include a wider perspective outside the immediate mechanics and implications of horse therapy (as a therapy or rehabilitation).

Summary

Children are our future, and it is important for parents, teachers, healthcare providers, and community leaders to create environments and opportunities for every type of child to thrive. It

is also a public health duty to assist and support those burdened with disparities, such as the families who care for special needs children and face financial, resource, and health and well-being hardships and disadvantages, as a result (Friend et al., 2009). Horse therapy has been proven to be beneficial to the health and well-being of special needs children (and their families), but the voice and experiences of these children are missing from the literature, meaning there is still a void in the professional and scientific understanding and development of the therapy.

Furthermore, a large gap exists in the public health facilitation and resourcing of horse therapy centers, so that the therapy can be more widely available and accessible to the special needs public that tend to be underserved by both the private and public health sectors (Oldham et al., 2006). The purpose of this qualitative, exploratory study was to resolve the research gaps and root the data in phenomenology (for inquiry into the overall experience of the therapy), ethnography (to account for the effects of horses and horse culture), and grounded theory (to summarize and organize collective experiences along with the ecology of horse therapy centers) into logical, applicative public health models for horse therapy program facilitation. Chapter Two contains a detailed literature review on horse therapy as it affects the health and well-being of special needs children and the public health ecological impacts of horse therapy centers in communities. A detailed methodology for each part of the study is presented in Chapter Three. The results of the study are listed in Chapter Four, and data analysis is presented in Chapter Five, with a special section that offers conclusions and additional considerations and parameters involved with the study that may provide important ethical and methodology considerations for more comprehensive studies in the future.

Chapter 2: Literature Review

Introduction

Horse therapy is an emerging alternative therapy for special needs children and their families, though it remains a relatively new field of academic study (Anestis et al., 2014; Hession et al., 2014; Klontz et al., 2007). Information on health and well-being from the perspective of special needs children and their families involved in horse therapy is particularly lacking in the literature (Benda, McGibbon, & Grant, 2003). Gaining perspective from special needs children and their families enhances our understanding of their experience, which helps professionals improve, develop, and promote horse therapies and programs intended for them, especially as public health initiatives and as a way to help reduce special needs family disparity. In turn, the experience (and potentially, the health and well-being) of the children who access the therapy can be improved upon.

The ecological impacts of horse therapy centers are another void in the literature; a study on this topic is one of the first in the world (Bolte, 2014). Providing a blueprint for the start-up and facilitation of horse therapy centers (specifically as public health outlets accessible to special needs families) and the ecological impacts the centers have on local communities (from a public health perspective) might help propel start-up initiatives, improve the accessibility of the therapy and its programming, and provide communities with a basic outline of what therapy centers entail for special needs children and the greater public. This chapter begins with an overview of the literature search strategy that was used to collect information on the health and well-being of special needs children involved in horse therapy and the ecological impacts of horse therapy

centers as public health accessible entities. The theoretical foundation, conceptual framework, and a highlighted summary of the literature are also provided.

Many general interest articles in amateur equestrian magazines and local farming newspapers are full of stories on the therapeutic and life-changing abilities of horses. Peer-reviewed literature is considerably scarcer, as the topic of horse therapy remains a new field of academic study (Boyd, 2013; CanTRA, 2016; EAGALA, 2010; Klotz et al., 2007; PATH, 2015; Wilson et al., 2015). As a result, there are many informal theories, methods, opinions, and definitions related to horse therapy and its applications. Discretion for the purposes of this study has been applied using the foundations, standards, and working definitions of internationally recognized and accredited horse therapy organizations, though there may be other theories and applications not included in this paper that have considerable merit (Boyd, 2013; CanTRA, 2016; EAGALA, 2010; Hallberg, 2008; PATH, 2015).

Significance to Public Health

As equine-assisted therapy and public health researcher Bachi (2012) explained, "People benefit from interventions with horses" (p. 364). However, Bachi acknowledged the abundant problems in scope, methodology, and data interpretation of studies on health interventions with horses. One of the key problems is that non-horse-experienced people study horse therapy, and without a horse background, it is virtually impossible for horse therapy researchers to observe, describe and account for the horse-human component, which is central to the phenomenon of how and why horse therapy is so widely effective and applicable to a wide range of special needs children and adults (Hallberg, 2008). Few quantitative researchers understand that horses (and their healing and restorative bond with humans) and horse therapy are not purely scientific

entities, and consequently, quantitative studies can never wholly explain or encompass all the ways in which horse therapy works and/or affects health and well-being (Bachi, 2012). Public health and horse therapy are parallels in this way; public health is not pure science – there are aspects of humanity, society, culture, environment, nature, and nurture that all interweave with quantifiable health, biology, physiology, and chemistry to define and encompass the field of public health. Unlike western medicine or private practices, public health does not address one condition, one symptom, or even one person – it must comprehensively and flexibly prevent, treat, manage, and address a variety of populations, needs, health disparities, problems, economics, societies, cultures, demographics, religions, and lifestyles that affect people and their health. This can involve anything and everything from environment, education, housing, genetics, epidemics, pathogens, basic community health and national health administration, political upheaval and natural disasters, food and health coding, waste disposal, sexually transmitted diseases, international travel, mental health, socioeconomics, culture, demographics, and the overall well-being of publics (along with many other sub-fields of public health).

Therefore, public health is not one subject, it is many, and for this reason, there are very few direct public health journals in this literature review on horse therapy – because horse therapy and horse therapy with respect to public health is not one subject, either (Chalmers & Dell, 2011; Hallberg, 2008). It is many subjects, which includes science, nature, environment, physical therapy, psychology, nursing, mental health, happiness, enjoyment, physical and mental stimulation, human interaction, horse interaction, the concept of health, the concept of well-being, family, culture, leisure, exercise, ability, empowerment, neurology, education, farming, social work, animal husbandry, holistic healing, rehabilitation, growth, human development, and

alternatives to western medicine and chemical prescriptions (Gabriels et al., 2012; Hallberg, 2008). In these ways, horse therapy is able to treat a variety of diagnosed and undiagnosed special needs individuals and their families from diverse backgrounds and populations as a public health initiative that not only resolves many disparities special needs families experience, but it also supports and empowers them (Chalmers & Dell, 2011; Wilson et al., 2015). However, the information necessary to facilitate public health horse therapy initiatives and an ecological understanding of their impacts, along with exactly how and why horse therapy affects the health and well-being of special needs children and what can be done to improve upon it, is not currently available in a synergistic, relevant, and applicable format (Bachi, 2012). Yet, by blending a variety of theories, conceptual framework, and methodologies, that is exactly the void I hope to have filled with this study.

Literature Search Strategy

Academic Search Complete is one of Walden University's most extensive online databases and is endorsed by Walden for its cross-sectional and inter-disciplinary library of information it offers on a variety of subject areas. Academic Search Complete was, therefore, chosen as the primary database due to the scope of this study, which requires a cross-examination of several topics, including special needs children, their health and wellness, alternative therapies, horse therapy, the ecology of horse therapy centers, the environment of horses, and the short-term and long-term impacts of horse therapy centers in local communities. Documentation on horses and their relationship to humans is deeply rooted in history and linked to both physical and metaphysical properties that have been extended to explain horse therapy. Although most of the publications on the health and well-being aspects of horse therapy and the

ecological impacts of horse therapy centers referenced in this review are dated from 2000 to 2015 (as horse therapy, itself, is a relatively new field of academic study, and the primary referenced publications used here range from 2007 to 2015), supplementary information on horses, their body language, and their relationship to humans has also been incorporated, which dates back to 1980. The search terms and combinations of terms used to gather information included, *special needs children*, *special needs health*, *horse therapy*, *horses*, *hippotherapy*, *EAGALA, therapeutic riding*, *community horse therapy*, *alternative special needs therapy*, and *equine-assisted therapy*. Information on the ecology of horse therapy and more specific information on CanTRA, EAGALA, and PATH was not readily available through the database, so a standard GOOGLE search engine was utilized, using the search terms, *CanTRA*, *PATH*, *EAGALA, equine-assisted psychotherapy*, *ecological impacts of horse therapy centers*, *public health horses,* and *environmental impacts of horse therapy centers*. A book search was also conducted through Amazon, where hard copies and electronic versions of books of interest were ordered and accessed by mail or email. Amazon book search terms included, *horse body language*, *horse therapy*, *systems theory*, and *special needs horse therapy*. I was also fortunate to have many supportive friends and family members (many of which are highly active in the horse and horse therapy community) who often forwarded me horse therapy articles, newspaper clippings, and videos via email and Facebook.

In an attempt to best understand the organizational theories and approach of EAGALA and PATH, I applied for membership at both organizations and utilized the organization-sponsored literature in the form of welcome packets and monthly e-newsletters as preliminary research. I was fortunate enough to be introduced to many people directly involved with

CanTRA, and so, any questions or information I requested were often directly answered and provided through personal correspondence. Because academic research articles and books on the ecological perspective of horse therapy centers were not found, a few general interest articles from equine- and farm-related magazines and environmental reports were used instead (using the keywords mentioned above). The ecology of horse therapy centers appears to be a very new and previously unstudied topic, and so, to begin true academic-based inquiry, I interviewed farm, environmental, land management, economic, and ecology experts at the community level in order to find out, directly, what basic factors are needed to facilitate horse therapy centers and how those factors collectively impact local communities from a public health perspective. Any conflicting or contradictory information derived from either the general interest articles or expert-led interviews are discussed in Chapter 5.

Theoretical Foundation

Few scholars have defined a consistent theoretical basis of horse therapy for children and adults with special needs (Granados & Agis, 2011). There are many theories, classifications, and descriptions of horse or equine-assisted therapy with overlapping framework and interchangeable terms and definitions (Granados & Agis, 2011). Specific ideologies and conceptual constructs are often formulated by independent equine-therapeutically-based organizations. However, as many organizations grow and yearn to compete with each other while expanding in practice, their theories and methodologies compile, leaving only semantics to differ between organizational models and the different programs offered (Boyd, 2013; EAGALA, 2010; Hallberg, 2008; PATH, 2015). This will be discussed later in the chapter.

Hippotherapy, therapeutic riding, and equine-assisted psychotherapy remain three of the leading umbrella theories/models and methodologies for horse therapy and the accredited organizations that administer them (Granados & Agis, 2011). Together, these three theories encompass more-refined, but often parallel, classes of horse therapy theories and methodologies. Hippotherapy, therapeutic riding, and equine-assisted psychotherapy are purposely broad and malleable, which allows them to be personalized and applied based on the needs of participants and the affiliations and philosophies of the accredited organizations offering horse therapy to them (Boyd, 2013; Granados & Agis, 2011; Hallberg, 2008). For example, the type of horse therapy used to teach leadership and teamwork in corporate settings will differ from the approach used in the mental rehabilitation of recovering alcoholics, and both of these may slightly differ from (but parallel) the approach used to treat trauma victims or special needs children suffering from physical disabilities (Boyd, 2013; Hallberg, 2008). However, the way in which hippotherapy, therapeutic riding, and equine-assisted psychotherapy are applied usually depend on the needs and the abilities of each individual participant; because horses and therapy sessions are entirely dependent on the one-on-one relationship each participant develops with the horse under the supervision of horse therapy teams, hippotherapy, therapeutic riding, and equine assisted psychotherapy are naturally-flexible and participant-led (EAGALA, 2010; Granados & Agís, 2011; PATH, 2015). Therefore, all three therapies (sometimes experienced in combination) are highly effective (though whether or not the overall impacts of the therapy are positive or negative are further explored in later chapters).

Hippotherapy

The direct translation of hippotherapy stems from the Greek word, *hippos,* which means horse, and literally translates to *therapy with the help of a horse* (Granados & Agís, 2011). Hippocrates documented the first known reference on the healing benefits of horses around 400 BC (Granados & Agís, 2011). He referred to horseback riding as a "healing rhythm" (qtd. in Granados & Agís, 2011, p. 191). In 1875, a physiotherapist named Chassaignac was the first person to recognize the strength, balance, suppleness, and morale improvements achieved by physically disabled people who engaged in horseback riding (Granados & Agís, 2011). However, official therapeutic riding centers throughout Europe, the United States, and Canada did not begin to emerge until the 1960s, where classic hippotherapy was introduced.

Classic Hippotherapy

The theoretical constructs and methodology of classic hippotherapy are simple. The three-dimensional movement of the horse is used as a therapy apparatus to mobilize and move the passive body of the rider (or participant; Granados & Agis, 2011). This approach solely focuses on the physical act of riding or being carried by the horse, from the participant's perspective (Hallberg, 2008). The physical movement of the horse is stimulating to the neuromuscular, musculoskeletal, and cardiopulmonary systems of the rider, and this is why horse therapy is thought to be positively effective for participants with physical disabilities or challenges (Bass et al., 2009; Granados & Agís, 2011; Silkwood et al., 2012; Shurtleff & Engsberg, 2010). Riders may assume various positions atop the horses, depending on their abilities, and although mental and emotional stimulation are not a direct focus of classic hippotherapy, the physicality of riding horses often conjures feelings of independence,

companionship, trust, enjoyment, relaxation, confidence, happiness, and excitement for those who are riding (Bass et al., 2009; Gabriels et al., 2012; Granados & Agis, 2011). This is thought to positively impact their mental and emotional state of being. Therefore, for those who enjoy being around and on top of horses, modern hippotherapy also indirectly impacts the mental, emotional, and psychological state of being (Hallberg, 2008).

However, to fully illustrate the critical impact and unique role of the horse in hippotherapy, it is important to point out that special needs individuals are already mobilized in other ways. For example, many special needs individuals (just like any other individuals) are transported by car and may have experience traveling by boat, train, or plane. Some special needs people get around by wheel chairs or motorized scooters. Although classic hippotherapy focuses on the physical movement and mobilization between horse and rider, there is also a deeper connection created between the two beings that is beyond the scope of basic mobility (Champagne & Dugas, 2010; Hallberg, 2008).

Horses are living, breathing, sensitive creatures; trust, friendship, and understanding are necessary elements between horses and their riders if harmonious, fluid movement is to be produced in hippotherapy (Hallberg, 2008). Physical achievements and advancements in riding (and therefore, a rider's personal mobility) require deeper emotional and psychological development in order for participants to adequately connect and communicate with their horses (Favali & Milton, 2010). When that connection is voluntarily sought after and if that participant enjoys the process of learning to ride, then that participant will indirectly experience mental and emotional growth, healing, and rehabilitation by connecting with the horse and as a result of the

purely-physical focus of classic hippotherapy (Bass et al., 2009; Granados & Agís, 2011; Favali & Milton, 2010; Hallberg, 2008).

Modern Hippotherapy

In the past 20 years, classical hippotherapy has evolved into "modern hippotherapy," which emphasizes classical hippotherapy (the movement of the horse) but also specifically incorporates the mental, emotional, and psychological components of horses to address social, behavioral, neurological, and cognitive challenges in participants (Hallberg, 2008). Granados and Agís (2011) identified three physiological theories that support modern hippotherapy: dynamic systems theory, neuronal group selection theory, and sensory integration theory. Dynamic systems theory represents an interaction of systems; people develop systematically (in body and mind) when their systems are exposed to other simple or complicated systems (Granados & Agís, 2011). In this case, the other system is the horse and its movement, which encourage a child to develop postural control, awareness, motivation, circulation, and rhythm (Champagne & Dugas, 2010; Shurtleff & Engsberg, 2010; Silkwood et al. 2012). The theory of sensory integration is simple; people learn and behave based on their senses and motor capabilities.

Modern hippotherapy immerses children in a stimulating environment with horses and farm living, and riding, by itself, involves sight, touch, smell, sound, and connection (Granados & Agís, 2011). Movement produced by the horse establishes a rider's fine motor control, and this combination of stimulating senses and refining motor skills are believed to help children learn and improve in behavior, coordination, and sense of self (Champagne & Dugas, 2010; Shurtleff & Engsberg, 2010; Silkwood et al., 2012). The theory of neuronal group selection has

many assumptions about the plasticity of the brain and its ability to create new wiring during new experiences, specifically in children (Bass et al., 2009; Gabriels et al., 2012). Granados and Agís (2011) claimed that modern hippotherapy helps children develop new brain connections because horse movement is complex and stimulating; through the theory of neuronal group selection, new brain connections facilitate skill-building and better overall function in children. However, it is important to point out that Granados and Agís (2011) have also concluded that the dynamic systems theory, sensory integration theory, and the neuronal group selection theory are purely theoretical and speculative as they relate to modern hippotherapy; very few empirical studies have been conducted on the topic.

Equine-Assisted Psychotherapy

Equine-assisted psychotherapy is another prominent umbrella-theory and methodology involving horses (Notgrass & Pettinelli, 2015). It differs from hippotherapy in the way horses are used to provide therapy to participants. In hippotherapy, participants are always mounted; they may sit or lay on top of horses; participants learn to ride and/or are stimulated by the horse's movements in a variety of activities. Equine-assisted psychotherapy involves un-mounted techniques and uses the experience of working with horses to address psychological issues (Hallberg, 2008). The theory and approach are rooted in the theories and principles of psychodrama, experiential therapy, and Gestalt psychotherapy (which originated in 1890), all of which define humans as sensitive, subjective, aware, and introspective (just like horses); the challenge and relationship-building humans experience while working with horses bring out the clinical issues they are facing (EAGALA, 2010; Ewing at al., 2007; Granados & Agís, 2011; Hallberg, 2008; Klontz et al. 2007). Experiential equine-assisted psychotherapy activities might

include grooming, lunging, catching a horse, mirroring a horse, choosing a particular horse from a large herd, equine games, and basic horse care-giving (Boyd, 2013; Klontz et al., 2007). Working with horses in these situations requires risk-taking, problem-solving, creativity, and trust.

In equine-assisted psychotherapy, horses act as catalysts, and the challenges presented in groundwork become metaphors for life's unique challenges and circumstances (Boyd, 2013; Dingman, 2008; Granados & Agís, 2011; Hallberg, 2008; Symington, 2012). Engagement in activities with horses is also stimulating and requires presence, participation, and commitment (EAGALA, 2010). This removes the passiveness and disengagement often experienced in traditional psychotherapy sessions, where listening by a therapist and reflecting by a patient become mundane, slow in progression, and therefore, a long-term treatment (Hallberg, 2008). Equine-assisted therapy often results in "quicker" growth, healing, and/or improvement in mental health conditions (in comparison to traditional psychotherapy), because horses cut out the need for a "middleman" (EAGALA, 2010; Hallberg, 2008; McCormick & McCormick, 1997; Symington, 2012).

In traditional therapy, a clinical therapist must listen, synthesize, diagnose, and reflect information back to a patient, which may take a single session or many sessions for a patient to absorb, understand, and apply that information to an outside issue or setting (Hallberg, 2008). In equine-assisted psychotherapy, horses become reflective therapists and demand immediate changes in behavior if their compliance is expected (Boyd, 2013). For example, children with severe anger management and aggression issues will be forced to control their behavior in groundwork sessions. If the child lashes out in anger or aggression, the horse will be scared,

untrusting, and respond negatively to the child. In order to rectify the situation, the child must develop patience and self-control during challenging or frustrating aspects of the activity in order to keep the horse engaged, calm, and obedient. When a child emulates calm and controlled behavior, the horse will respond positively, and the child is rewarded with the horse's trust, friendship, and completion of the exercise or task in the therapy session.

In these ways, horses immediately respond to participants during therapy sessions, which requires alterations in a participant's behavior, demeanor, or way of thinking, in order for the exercise to continue (Dingman, 2008; Hallberg, 2008; Symington, 2012). This automatic-feedback and response is the model for participant growth, rehabilitation, and development in equine-assisted psychotherapy (Ghorban et al., 2013; Wilson et al., 2015). However, this is not to say that the physiological and/or psychological changes remain permanent outside of the horse therapy session, though a participant will typically learn and make physiological, mental, or behavior changes in response and accommodation to the horse (in order to get through an exercise or activity) during the actual session (Boyd, 2013). These results can be harder to achieve in traditional clinical settings, where patients may "hear" and "understand" what fellow human therapists are saying, but they may not know how to apply that information to an outside situation, nor is a therapist present to help coach a patient through it.

Therapeutic Riding

Therapeutic riding is considered more "recreational" than hippotherapy and equine-assisted psychotherapy, and even though it is termed "therapeutic riding," groundwork may also be incorporated (in order to teach the participant more about horse care; PATH, 2015). Most horse therapy centers offer therapeutic riding as an offshoot of modern hippotherapy, but the

distinction in theory and approach is important because therapeutic riding may be offered at non-horse therapy centers, as it does not necessarily require a certified horse therapist (or safety volunteers) to teach or offer it (Hallberg, 2008). For example, injured athletes may take up therapeutic riding to maintain their core strength while gently re-strengthening injured calf muscles. In the process, they are learning a new skill – riding horses – and the focus is on teaching them to do so, which can be undertaken at any public equestrian barn or riding center. However, for special needs individuals, therapeutic riding is most often the approach used by certified horse therapists at horse therapy centers to allow more independent riding and equestrian skill building (including other disciplines involving horses, like vaulting or driving), while still incorporating tailored elements of hippotherapy and/or equine-assisted psychotherapy (with the help of specialized instructors and volunteers as ground support) to achieve overall improved health and well-being for special needs participants (American Hippotherapy Association, 2010).

PATH Model

The American Hippotherapy Association is the largest hippotherapy-oriented organization in the world, and its programming and certifications are approved for the treatment of children (by qualified therapists) dealing with a wide range of disabilities, including autism, behavior and social disorders, cerebral palsy, language and communication challenges, down syndrome, physical and psychological trauma, multiple sclerosis, spinal cord injuries, hearing impairments, and muscular dystrophy (Granados & Agís, 2011; PATH, 2015). The Professional Association of Therapeutic Horsemanship (PATH) works with the American Hippotherapy Association (and also heavily incorporates therapeutic riding theory) as a model to license

therapists and therapeutic riding, driving, and vaulting instructors in hippotherapy- and therapeutic riding-related theories and methodologies. In recent years, PATH has also expanded to teach and offer equine-assisted psychotherapy services (including equine-facilitated mental health treatment – which is an off-shoot to equine assisted psychotherapy, adult development, groundwork, and stable management).

These collective approaches with horses are incorporated by horse therapy teams to treat a variety of special needs children (and adults) in a safe, controlled, and regulated environment (for both horses and riders) based on the PATH model (PATH, 2015). PATH therapy and methods can only be administered at PATH accredited centers, which are equipped to treat physically and cognitively disabled children and adults, though as previously mentioned, additional services for non-clinically disabled persons are also offered (such as leadership programs and personal development). PATH is internationally recognized, with thousands of members that include PATH certified volunteers, instructors, and equine specialists in mental health and learning. There are also over 850 PATH accredited horse therapy centers, worldwide (PATH, 2015).

CanTRA Model

The Canadian Therapeutic Riding Association (CanTRA; 2016) began in 1980 and oversees over 80 horse-related therapeutic, recreation, life skills, and sport programs for special needs individuals across Canada. CanTRA (2016) remains the only governing body for therapeutic riding in Canada. Although most CanTRA centers focus on therapeutic riding, each center is unique in what types and combinations of horse therapy it offers, though, similar to PATH, official and unofficial elements of hippotherapy and equine-assisted psychotherapy (and

many more off-shoots) are used to create a holistic experience for CanTRA horse therapy participants. Also similar to PATH, CanTRA (2016) offers a wide range of certification programs for aspiring instructors, specialists, and volunteers. The organization provides employment opportunities to individuals with special needs. Since 1986, Olympic athlete Princess Anne has served as the patron of the organization to perpetuate therapeutic riding, as an initiative, in Britain and abroad (CanTRA, 2016).

EAGALA Model

The Equine Assisted Growth and Learning Association's (EAGALA) model is focused on groundwork, and so, hippotherapy and therapeutic riding are not incorporated. EAGALA is the leading international organization in traditional equine-assisted psychotherapy; it also employs and incorporates a dual theory-application called equine-assisted learning (Boyd, 2013; EAGALA, 2010). Equine-assisted learning is an offshoot of psychotherapy and uses similar experience and horse-led and driven techniques, but targets personal development issues, such as leadership, corporate team-building, and resiliency for at-risk youth. The combination of equine-assisted psychotherapy and equine-assisted learning allows the EAGALA model to address a variety of special needs, mental health, and human development issues among children and adults, including those suffering from autism, post-traumatic stress disorder, psychological trauma, eating disorders, behavioral issues, depression, anxiety, communication delays, language impediments, and substance abuse (Boyd, 2013; EAGALA, 2010). EAGALA therapy administration requires an EAGALA certified equine-specialist and an EAGALA certified mental health professional (that is a licensed therapist with a practice), in addition to the horse or horses involved in the therapy. It is possible for an individual to be certified as both an equine

specialist and mental health professional. EAGALA therapy is internationally recognized and renowned, with over 600 programs and nearly 5,000 members from over 50 countries (EAGALA, 2010).

PATH, CanTRA, and EAGALA Combined

Although EAGALA horse therapy teams do not incorporate hippotherapy or therapeutic riding, CanTRA, PATH, and EAGALA certified instructors and therapists can and do proficiently treat many of the same types of special needs children. Together, they also follow and apply both umbrella theories and methodologies (hippotherapy, therapeutic riding, and equine-assisted psychotherapy) and can treat a wide-range of participants and people looking for improvements in their overall health and well-being. This is why many horse therapy centers become educated in and/or accredited to offer both models. Among CanTRA's, PATH's and EAGALA's many similarities, horses – as the primary therapists and catalysts for healing, growth, and change – are the common thread (EAGALA, 2010; PATH, 2015). This is a testament to the extreme versatility, healing, rehabilitating, and teaching abilities of horses, which serve as the primary phenomenon to be explored in the conceptual framework of this study (Hallberg, 2008).

CanTRA, PATH, and EAGALA were developed under the leading equine-therapeutic theories of hippotherapy, therapeutic riding, and equine-assisted psychotherapy. They are all geared to the improvement and promotion of health and well-being for special needs, troubled, and self-improvement seeking individuals. One of the main goals of this study was to explore experienced changes in health and well-being from the perspective of special needs families and horse therapy teams involved in horse therapy at PATH, CanTRA, and/or EAGALA accredited

horse therapy centers. Although there are many similar theories, therapeutic organizations, and equine-based treatment programs, CanTRA, PATH, and EAGALA are the most widely-known and have the most applicability in using horses to treat children with diverse special needs (CanTRA, 2016; Hallberg, 2008). CanTRA, PATH, and EAGALA contain flexibility and customizability during therapy sessions, and therefore, horse therapy participants are assured to receive quality therapy with maximized potential for change, healing, rehabilitation, and/or growth in health and well-being (CanTRA, 2016; Hallberg, 2008). This also means that the study was able to remain unbiased in choosing special needs cases to document (provided they are pre-approved to receive horse therapy, all cases are accepted by CanTRA, PATH, and EAGALA). Therefore, there was an opportunity to account for any type of health and well-being outcome for children, which offers a larger contributory scope in filling the current gap in the literature.

Systems Theory in the Ecology of Horse Therapy Centers

Specific studies on the ecological impacts of horse therapy centers in local communities are extremely limited, though there are accessible write-ups on the environmental impact of horse operations, which are typically completed by local environmental agencies. They are posted in the forms of reports, however, and are not academic studies with a theoretical basis. The goal of this study was to put together a very basic model of the ecology of horse therapy centers as they may relate to public health using the grounded theory, but until factors and impacts could be known through observation and interviewing with local environmental, economic, farming, and community experts, the systems theory approach was used as the over-arching theory for this portion of the study. Systems (or action) theory is a model that originates

from Bertalanffy's general system theory, which facilitates an inter-disciplinary study of interacting systems (Strijbos, 2010). The theory is an organizational construct of multi-system relationships, which accounted for the resource, land, animal, staff, farming, community, environment, economic, and societal impacts of horse therapy centers on local areas (Bolte, 2014; Jump, 2014; Strijbos, 2010).

Conceptual Framework

This study was based on three conceptual approaches: phenomenology, ethnography, and the grounded theory. The phenomenon of horses and horse interaction was central to this study on horse therapy (Hallberg, 2008). An ethnographic approach provided the cultural aspects of horses and the people and surroundings of a horse therapy center, which also applied to the overall ecology of those centers in the community and how the ecology may impact public health (Symington, 2012). The grounded theory was used to compile and organize information from the literature and data collection to formulate a model involving the health and well-being effects of horse therapy from the perspective of children and to put together a blueprint for horse therapy initiatives that interested communities could access and quickly understand.

Phenomenology

To validate and justify phenomenology research methods and data synthesis as they relate to the study of phenomena, phenomenology heavily depends on philosophical and psychological reasoning, which states anything perceived or experienced is real solely based on those standards, even though such perception and experiences cannot always be described or measured in numbers (Creswell, 1998). Phenomenology is a philosophy that allows researchers the right and the freedom to cast off any overbearing or presiding theories, methods, models, or restrictive

parameters (within reason) that might prevent them from studying and exploring the phenomena of interest in new ways (Ta Vallaei & Abu Talib, 2014). This conceptual approach was particularly important to this study on horse therapy because horses are the primary phenomenon. Horses are unique animals that affect people deeply at the physical, emotional, mental, and psychological level, partly due to their sheer size, intelligence, versatility, athleticism, personality, and reliable-ness (Hallberg, 2008). Horses have the ability to serve horse therapy participants in many different ways.

An immobilized child can experience the feelings of freedom and independence walking atop a horse, while receiving physically-beneficial stretches and trunk movement (Champagne & Dugas, 2010). An emotionally disturbed child may receive mental healing through the calming and friendly effects working with a horse brings (Ewing et al., 2010).

Dingman (2008) stated:

> The special relationship between horse and rider can lead to increased confidence, patience, and self-esteem. Learning how to trust and communicate with a horse can help a child feel more comfortable with humans. Most importantly, these relationships provide safe opportunities for children to challenge themselves and to try new things. (p. 12)

Horses are believed to affect health and well-being through their movement and the enjoyment and relevance their presence brings; this phenomenon is the core of horse therapy (Hallberg, 2008). However, the exact way in which those effects generated during horse therapy specifically translate to health and well-being from the perspective of children and their families is still unknown (Bass et al., 2009; Ewing et al., 2007; Gabriels et al., 2012; Klontz et al., 2007).

Horses are also the core of horse therapy centers and are primarily responsible for the ecological impacts those centers have in the community, which is a key topic of inquiry for this study (Bolte, 2014).

Ethnography

Interpreting the results of ethnographically-based studies are often rooted in generalized cultural and psychological theories (Creswell, 1998). Theory in ethnography serves as a tool for data synthesis and interpretation on cultural elements related to a specific field or topic of study (Fink, 2000). Ethnography, in this study, was applied to the farm, barn, and horse culture as it related to horses, as the main phenomenon. Although phenomenology and ethnography are traditionally two different types of conceptual framework for qualitative analysis, both were needed to properly structure the data into an overall picture and model of horse therapy as they affect health and well-being for special needs children and contribute to improved public health facilitation for special needs family support in local communities (Dingman, 2008; Hallberg, 2008). For example, Dingman (2008) frequently included notes on the friendly, welcoming atmosphere provided by the horses and the therapy team members, with additional support added by parents and/or family members who are allowed to be present during their child's therapy session. These cultural aspects of horse therapy certainly affect the overall impact of the therapy and contribute to the phenomenon of the interaction between horses and humans and how that translates into changes in health and well-being (Dingman, 2008; Gabriels et al., 2012; Hallberg 2008). Chalmers and Dell (2015) associated a large portion of the effectivity of horse therapy for a group of troubled First Nation adolescents with the fact that horse therapy embodies a culture and an environment that coincides with the traditional culture, environment, and

spirituality of the First Nation People, as opposed to traditional or clinical therapies and interventions that take on a purely "Western medicinal" and scientific approach, which is very foreign and irrelevant to many types of people (and not just those of First Nations). In these ways, and in this study, ethnography was a justification and signifier for the importance of interviewing former child horse therapy participants (who are now adults) and parents/guardians of special needs children involved in horse therapy; as Dingman (2008) explained, these experiences naturally include factors resulting from the unique environment that horse therapy service delivery takes place in (Creswell, 1998; Symington, 2012). In other words, the environmental and cultural aspects of horses and farms are contributory aspects to the overall ecological factors and impacts of horse therapy centers in communities, and this information in intended to serve as a blueprint on public health initiative for special needs families at the local level (in terms of environment, experience, enjoyment, support, and accessibility; Oldham et al., 2006).

Grounded Theory

The grounded theory is a conceptual approach used to discover a theory or model to help explain the progression, organization, or stages of a particular event, application, topic, or issue (Ta Vallaei & Abu Talib, 2014). The grounded theory follows a "theory of identified themes," as they are spelled out in the literature and/or after data collection, to confirm and organize those themes into logical patterns or models. This result is considered "a theory," but requires extensive quantitative research and intervention to truly solidify it (Creswell, 1998). A grounded theory-theory is a product of the study, itself, as results are to a quantified study, and although true to the study itself, the theory may have no validity or reliability outside the framework of

that one study. The role of grounded theory in this study was to create and organize the health and well-being outcomes of horse therapy based on feedback from special needs children (who are now adults) and special needs families with children currently involved in horse therapy, along with a tiered model (or blueprint) of the ecological impacts of horse therapy centers on communities. These models are only used as examples, however, and they may only be applicable to the therapy centers where participants received (and/or still receive) horse therapy.

Literature Review

Nimer and Lundahl (2007) completed a systematic review of 49 studies on animal-assisted therapy and reported a consistent outcome: with moderate effect sizes, animal-assisted therapy appeared to improve autism-spectrum symptoms, medical difficulties, behavioral problems, and emotional well-being. Friedman et al. (1980) found that heart disease survival rates were associated with pet companionship. Out of 53 patients who owned pets, only three (six percent) died within 12 months, which stands in stark contrast to 11 out of 39 patients that did not own pets and died within 12 months (Favali & Milton, 2010). Animals as therapy companions have been documented in the literature for centuries by some of the greatest doctors and psychologists that ever lived, including Hippocrates and Freud (Granados & Agís, 2011). Horses are unique therapy animals, due to their high emotional intelligence and the option of methodical mobility for people (Hallberg, 2008). The following literature review is a summary of key and notable studies on horse therapy and the impact it has had on individuals with physical and cognitive disabilities, emotional disturbance, poor mental health, and autism spectrum disorders.

Physical and Cognitive Disabilities

Favali & Milton (2010) demonstrated the wide-applicability of horse-therapy for disabled adults. Five participants suffered from varying degrees of multiple sclerosis, stroke, and paraplegia and had varying degrees of riding experience, ranging from novice to advanced. Therapeutic riders were asked to discuss the physical benefits of riding, and reports included the elimination of pain and muscle spasms while riding, relief from stretches created by the movement of the horses, improved balance, better metabolism, better fitness, and diminished disability, which are health improvements also commonly documented in PATH (2015) and EAGALA (2010) testimonials (Favali & Milton, 2010). Riders also commented on improvements in psychology, including a better sense of self, wholeness, and identity; a decrease in self-centeredness; increased confidence, drive, and motivation; a sense of being "equal;" new perspective; normality; an emotional relationship with the horses; and a deep sense of connection based on the fact that a friend – the horse – is what provides mobility, independence, pleasure, and purpose (Favali & Milton 2010). The riders all insisted that riding and their connection with their horses improves their overall health and well-being, though it is important to mention that at least one of the riders was originally disabled due to a horse-induced injury (this was not under therapeutic riding instruction). Favali & Milton (2010) concluded their study with the recommendation that the physical and psychological benefits of riding be explored on a larger scale and in other contexts.

Hession et al. (2014) conducted a mixed-methods study with 40 children with dyspraxia. The children experienced six 30-minute standard (nontherapy specific) horse riding sessions along with two 30-minute audiovisual screenings (involving horses). Significant reductions in

the time it took for patients to complete walking tasks (which suggested increased mobility) and visual improvements in physical ability (such as toe in/out values and cadence) were documented. Fifty-one percent of patients were reliably improved and 48.7% were unreliably changed ($p < 0.0001$). There were no participants with a deterioration of physical ability by the end of the therapy. However, no significant changes for any patient for stride length were reported.

Hession et al. (2014) concluded that riding horses provided children with a perception of beat-based rhythm – which aligns with hippotherapy theory – and that the movement of the horse stimulates cognition, mood, and gait parameters. This is supported by the PATH, CanTRA and equine-assisted psychotherapy models (CanTRA, 2016; Hallberg, 2008; PATH, 2015). Hession et al. (2014) attributed the overall improvements to cerebral stimulation to the movement of horses, which also caused the stimulation of a variety of physical, emotional, and psychological systems in the children, too. Hession et al. (2014) suggested that this evidence could confirm the link between horse movement and human cognition. Hession et al. (2014) explained:

> The perception of beat-based rhythms is thought to stimulate memory, attention, and cognition, as well as performance velocity and correct motion pattern synchronization . . . Combined with supported theories of the internal link between cognition and movement, there is considerable support for the potential of equine therapy in the treatment of both gait and cognitive disabilities/illnesses. (p. 22-23)

Parents of the participants in the study noted improvements in their child's self-esteem, confidence, anxiety, flexibility, mood, self-regulation, behavior, coordination, motivation, focus,

empathy for others, social skills, pride, sense of self-worth, school performance, and core stability (Hession et al., 2014). The quantitative portion of the study reflected these findings, though without significance. Parents also mentioned an improvement of calmness and reduced anxiousness in the children, but those symptoms were only noted for two to three days after the therapy; those particular improvements were not sustained afterwards. Hession et al. (2014) did not explore the root causes of these parental reports, but they did acknowledge the importance of parental feedback. Perhaps, if follow-up interviews with the children had been conducted, the changes observed by parents could have been explored in better detail, as they related to their children's experience and overall health and well-being.

Benda et al. (2003) evaluated the effectiveness of hippotherapy by randomly exposing 15 adolescents with cerebral palsy to eight minutes of riding a stationary barrel or eight minutes of hippotherapy at a PATH certified center. Electromyography was used to measure muscle activity, and there was significant improvement in the symmetry of muscle activity by 64.6% ($p = 0.051$) among the hippotherapy group. No significant changes were documented in the group sitting on the barrel. Aligning with hippotherapy and PATH theory and practices, Benda et al. (2003) concluded that the movement of the horse was responsible for the measured improvements in muscle activity. Benda et al. (2003) stated:

> This slow, rhythmic movement combined with gentle stretching of stiff muscles appears to reduce abnormally high muscle tone and promote relaxation, while at the same time, promoting bilaterally symmetrical postural responses that increase tone in hypoactive muscles . . . this may explain why some disabled children, after

> a series of hippotherapy sessions, walk with greater ease and demonstrate improved motor function. (p. 825)

A pilot study by Shurtleff and Engsberg (2010) also found that after 12 weeks of hippotherapy, children with cerebral palsy showed an increased stability in their head and trunk in response to the movement of their pelvis caused by the horse. Benda et al. (2003) noted that in hippotherapy, children also benefit from the engagement in a low-risk sport, a sense of independence from being atop a horse, improvement in communication, psychological enhancement, and the chance to bond with a horse. Silkwood-Sherer et al. (2012) investigated the efficacy of hippotherapy for children with balance deficits and movement disorders. Sixteen children were exposed to 45-minute hippotherapy sessions twice a week for a six-week duration. Balance was measured three times using the Pediatric Balance Scale and the Activities Scale for Kids—Performance. Post hoc analyses revealed statistical differences between baseline and post-intervention checkpoints ($p < 0.017$). The degree of difference was indicative of large effects sizes for hippotherapy, and Silkwood-Sherer (2012) concluded that hippotherapy is, indeed, a useful strategy at a clinical level for improving balance and performance of everyday-life skills for children with balance deficits and movement disorders. Even more importantly, a few of the children were deemed "less disabled" based on category scores from post-intervention.

Champagne and Dugas (2010) completed a study on two young down syndrome children (aged 28 and 37 months) and tracked their progress during an 11-week hippotherapy program that was intended to address their gross motor skills. A PATH certified instructor administered the therapy. Two physiotherapists confirmed the results. Each child demonstrated vast

improvements in running, walking and jumping, and greater postural control in either the head or trunk. Hippotherapy was found to be a successful in addressing physical and neurological afflictions experienced by these two down syndrome (also known as trisomy 21) patients. Champagne and Dugas (2010) explain:

> The horse will take 3000 steps during a session, walking at 100 steps/minute, which implies that the child explores a range of motor solutions in terms of muscle synergies involved in trunk and head control. Moreover, such stimulation provides a valuable environment for learning new motor strategies that could be used by the child in daily functional activities. (p. 568).

Both children showed adaptive responses to postural changes induced by the movement of the horse (Champagne & Dugas, 2010).

This literature review on physical and cognitive disabilities is not meant to be exhaustive, but rather, it is intended to reflect the diverse applications of hippotherapy, therapeutic riding, CanTRA, PATH, and equine-assisted psychotherapy models. Non-peer reviewed special interest articles and publications have positively documented the rehabilitation of patients suffering from spinal cord injuries, brain injuries, paralysis, stroke, and heart disease in children and adults using hippotherapy, therapeutic riding, and equine-assisted psychotherapy. However, the direct perspective of children is actively missing from the literature, as is explorative inquiry on what perceived health and well-being effects are experienced as a result of the horse therapy and if those effects last (Benda et al., 2003; Champagne & Dugas, 2010; Shurtleff & Engsberg, 2010). A better understanding of what special needs children experience, with supplemental feedback supplied by horse therapy teams and families may help improve the scope and quality of the

therapy intended for children suffering from physical and cognitive disabilities (Bachi, 2012; Wilson et al., 2015).

Troubled, Learning Disabled, or Mentally-Ill Children

Children suffering from severe physical and emotional trauma, learning disabilities, and/or mental illness may or may not be classified as special needs, depending on how debilitating their symptoms are. Sometimes, these afflictions can cause emotional disorders due to discouragement, low self-esteem, lack of understanding, lack of confidence, or feelings of helplessness (which diminish well-being), which can then manifest in other ways and render severe health consequences (Hallberg, 2008). Regardless, the CanTRA, PATH, and EAGALA models include troubled, learning disabled, and mentally ill children in their scope of treatment (Chalmers & Dell, 2011). Dingman (2008) recorded the case study of a six-year old, named Sarah, who suffered from low self-confidence and social anxiety, but found relief through basic equine-assisted psychotherapy interactions with a horse, which eventually allowed her to pursue relationships with other people at the same farm. Dingman (2008) reported that the barn became a safe place for Sarah because it was quiet and she knew the horses would always accept her and be her friends. Therapeutic horses and therapy centers become a safe, welcoming haven for troubled or mentally-ill children, allowing them to heal and grow in an environment that is perceived as calmer and safer than the outside world. This assessment by Dingman (2008) supports the conceptual framework of ethnography and barn-culture.

Dingman (2008) also recounted the effects that a horse named Captain had on a ten-year-old boy named Noah, who was diagnosed with a debilitating lack of confidence and low self-esteem, due to two high powered and controlling parents. A horse therapist put Noah in charge

of Captain, who was obedient, and in the process of caring for and directing Captain, Noah became assured of himself and his leadership abilities through the experience of being Captain's leader. Any scientific critic may claim that these "small" and perhaps "immeasurable" improvements in sense of self are not significantly impactful in terms of health and well-being, however, McCormick & McCormick (1997) presented dozens of patients (suffering from a variety of afflictions, such as schizophrenia, suicide, and abuse of all types) who relayed feelings of newfound happiness, healing, wholeness, and the overall life-improvement and life-changing experiences therapeutic horses bring to them.

Hallberg (2008) documented the quote of an anonymous mental health patient who recounted a particularly meaningful horse encounter: "Cloudy turned his head around to look at me, and it was like I was seen, seen for the first time in the most intimate way I could ever imagine" (p. 157). The phenomenology of horses emphasizes the mystical acceptance and openness of their demeanor. Horses do not judge, which puts participants at ease, and through the approach, activities, and exercises under the CanTRA, PATH, and EAGALA umbrella, participants are able to work through their issues with understanding horses by their side, which then becomes the basis for healing, rehabilitation, and growth for people who are struggling (Symington, 2012).

Ewing et al. (2007) used a mixed methods approach to evaluate the efficacy of a nine-week equine-facilitated learning program among 28 emotionally disturbed youths. Participants suffered from moderate to severe behavioral disorders, misconduct, and/or learning disabilities. Equine-assisted psychotherapy programming aligned with aspects of EAGALA modeling (though riding components were included) and was administered by a PATH certified instructor.

Participants were encouraged to attend 9 weeks of horse therapy for a minimum of 36 hours total, which exposed them to all aspects of horse involvement (such as horse games and activities) and care giving.

Although quantitative analyses (using standard questionnaires and standardized testing) showed no significant improvements in areas of self-esteem, empathy, self-control, and feelings of depression and loneliness, observations of participants revealed something quite different. A ten year-old girl with post traumatic stress disorder and a family history of mental illness and physical and emotional abuse began to open up about her personal fears and issues for the first time by relating them to the female horse she was paired with. Her teacher also remarked on her new-found ability to smile (Ewing et al., 2007). An 11 year-old girl with multiple signs of Behavioral Disorder, an educational mental handicap, a speech impediment, a history of sexual abuse, a low-functioning mother, a poverty-stricken family, and poor personal hygiene showed improvements after just one therapy session with her assigned horse, Cameo. By learning to groom Cameo, the little girl learned about personal hygiene. It was reported that the regimented schedule and discipline of the therapy center and its programming helped with her self-control; learning to ride increased her self-confidence (Ewing et al., 2007). By the end of the nine-weeks, her social skills had improved so much that her teachers requested that she be allowed to repeat the program. After one year, the little girl was re-introduced to traditional school and was able to function in a mainstream classroom. A 13 year-old boy with attention deficit hyperactivity disorder found focus and trust by working with his riding instructor on the ground to develop enough skills to be allowed to ride. His past behavior of running away from home stopped

because he developed trust and felt a responsibility to stay and care for his hose (Ewing et al., 2007).

Ewing et al. (2007) were surprised at these results and expected the quantitative portion of the study to reflect the changes observed in the children qualitatively by teachers and horse therapy teams. However, it is possible that the feelings and behavior of the children did not change because the children had not had a chance to progress to that level in therapy. In all the reported case studies by Ewing et al. (2007), it was during the course of the therapy that the root of many of the emotional and behavioral problems being experienced by the children were first discovered; due to the short duration of the program, there may not have been time to teach and practice changes in attitude and behavior. Ewing et al. (2007) also mentioned that the children experienced severe separation anxiety after they completed the program, and many participants wished to return to horse therapy, but protocol did not allow it. This, alone, suggests that the therapy is successful and enjoyable to children. The discrepancy in results between the qualitative and quantitative methods might also highlight the importance of observation in horse therapy studies.

The phenomenal nuances that occur between horses and special needs children may be immeasurable in certain respects. Or, the true changes in special needs and/or troubled children that are accomplished through horse therapy may not be accurately reflected by standardized tests and questionnaires. PATH (2015), CanTRA (2016), and EAGALA (2010) models are purposely flexible and adaptive to the individual needs of each participant, as are the horses. Therefore, individual assessments may be required to track the actual changes that take place as a result of therapy. Because children and family members were not consulted in the Ewing et al.

(2007) study, additional insight and/or clarification of the results could not be provided, which is a void this study was inclined to fulfill.

Autism and Autistic Spectrum Disorders

Ward et al. (2013) analyzed changes in social communication and sensory processing skills among 21 elementary school-aged children with autism. They investigated this relationship under the presumption that therapeutic riding is able to help autistic children refine skills in attention, self-control, focus, sensory management, language development, and overall communication. Ward et al. (2013) reasoned that horses are naturally stimulating to the senses, and riding them requires simultaneous coordination of multiple systems, which autistic children often struggle with. Ward et al. (2013) used a single group quasi-experimental design that offered two phases of therapeutic riding with three different checkpoints for classroom teachers to measure changes in social communication and sensory processing skills. The therapy center was PATH certified. The PATH riding instructor assigned each participant to a horse, after taking time to assess each participant's individual needs and tendencies. For example, children with aggressive or loud tendencies were assigned to horses that were tolerant of aggressive and loud behavior to assure safety. Therapy teams (of three – the therapeutic instructor and two side-walkers) customized each session to each horse and rider pair and discussed the positive and negative aspects of each session and then made new lesson plans for the following week, accordingly. After 10 weeks of therapeutic riding, univariate analyses showed significant changes ($p < 0.5$) in the Autism Index and Social Interaction testing, with an overall decrease in ratings of autistic severity, with classroom teachers noting concrete improvements in attention, tolerance, and sensory reactions (Ward et al. 2013).

This aligns with findings on similar autistic inquiries by Bass et al. (2009) – a study in which parents noted that their autistic children were more socially engaged with others, were more functional in their responses to sensory stimuli, and were more attentive after participating in therapeutic riding. Similarly, Gabriels et al. (2012) found that autistic children were generally better at self-regulation after therapeutic riding. Ward et al. (2013) claimed that these combined findings suggest that therapeutic riding is beneficial to autistic children in multiple concepts and that qualitative parent and teacher feedback should be added to standardized, quantitative data. However, it is important to note that once the ten-week therapy sessions ended, autistic participants showed a decrease in retention of new skills.

After another eight weeks of therapy, Index and Social Interaction scores improved several points again, which marked a decrease in overall autistic tendencies and severity. Ward et al. (2013) concluded that consistent therapeutic riding creates and sustains improvements for autistic children, but whether or not longer-termed sessions are needed for longer-termed effects is unclear. Ward et al. (2013) also commented on the lack of information that explains why the therapy works and how it leads to changes in autistic behaviors in children. Bass et al. (2009) suggested that the coordination and active participation (enthusiasm) required to ride affects cerebellum functioning, which controls motor, sensory, and social coordination and behavior. Gabriels et al. (2012) wondered if this is because the horse is sensitive and reflective of the rider's commands and behavior, and so the children learn that their communication and behavior affect the horses, which prompts them to change and adjust accordingly, in order to ride and work together more harmoniously.

Ward et al. (2013) hypothesized that the autistic children become bonded to the horse, which is sensitive to other people (such as the riding instructor and other individuals on the therapy team), and the child then shares in this experience and begins to learn and understand social appropriateness and behavior. In addition, autistic children are motivated to learn how to ride their new companions, and in order to teach them to do so, riding instructors are motivated to prompt children verbally and non-verbally (depending on their needs and abilities) and ask them to do tasks that involve focus, obedience, risk-taking (within reason), perseverance, patience, and the acceptance of both triumph and failure (EAGALA, 2010; PATH, 2015; Ward et al., 2013). At the end of their study, Ward et al. (2013) endorsed therapeutic riding as a potential therapy for autistic children, but they did warn against the lack of information on why it works. They also encouraged the exploration of other types of animal-assisted therapy and methodology that better incorporates and measures child behavior. Their suggestions included talking more with children, parents, family members, teachers, and therapy instructors and being open to their various forms of input.

In a comprehensive literature review on 14 animal-assisted therapy studies for autistic children and adults by O'Haire et al. (2013) – which included studies by Bass et al. (2009) and Gabriels et al. (2012) – nine out of 14 studies reported improvement in social interaction, which was defined as "the frequency and/or duration of verbal and nonverbal social behaviors" (O'Haire, 2013, p. 1613). Researchers in five studies observed increases in communication skills and use of language, however, O'Haire concluded that this communication was horse-oriented, meaning that autistic individuals were more inclined to speak about their new-found interest in animals, but not necessarily more inclined to communicate, in general. Similarly,

observed results among the 14 studies reviewed by O'Haire. listed decreases in self-absorption, stress, problematic behaviors, and isolation, and an increase in human-directed social interaction. However, while Bass et al. found an increase in social responsiveness among autistic children, Gabriels et al. found no significant change in overall socialization skills, which, according to O'Haire, meant that horses provide motivation to socialize, along with social stimuli to respond to, but that does not necessarily translate into an overall ability to socialize.

Based on their conclusions, Gabriels et al. (2012) and O'Haire (2013) may explain the findings of Ward et al. (2013), where children were only able to maintain improvements in their autistic tendencies when they were regularly involved in horse therapy because those improvements were related and dependent upon the horses. However, by asking children (and their families and horse therapy teams) about their experiences with horse therapy, why certain changes and feelings are not sustained after therapy, what riding and working with horses in therapy means to them, and how they feel their health and well-being are affected by the therapy, direct information could be obtained (Anestis et al., 2014; Bass et al., 2009; Ewing et al., 2007; Granados and Agís, 2011). Special needs children are the best people to provide insight into horse therapy and how their health and well-being are impacted, so that the therapy can continue to be developed and refined to assure they receive the best experience and optimal health outcomes possible.

Other Afflictions in the "Special Needs" Category

Hippotherapy, therapeutic riding, equine-assisted psychotherapy, PATH, CanTRA, and EAGALA support the treatment of a wide-variety of physical and psychological afflictions, many of which are not mentioned above due to limited amount of peer-reviewed research

available in the field and this study's inherent restriction in reviewing English-only papers. One advantage of horse therapy is that people do not need clinical diagnostics or prescriptions to access it; parents seeking alternative therapies for their kids are able to enroll their children in therapeutic programs without the prescription of a doctor (Bachi, 2012; EAGALA, 2010; PATH, 2015). The PATH, CanTRA, and EAGALA models are specifically designed for horse therapy teams and therapy horses to assess each participant and personalize therapy sessions, accordingly. In this way, many afflictions, disabilities, diseases, and circumstances are addressed in horse therapy, but horse therapy application has a focus on horse movement, experience, solution, and treatment, as opposed to clinical diagnostics and heavy discussion on perceived outcomes (Chalmers & Dell, 2011; Ghorban et al., 2013; Hallberg, 2008; Meyer, 2006). To address some of these challenges innate to the design and efficacy of the therapy, this study proposed a methodology that combines interviews with adults who underwent horse therapy as children and special needs families currently involved in horse therapy, as well as an analysis of the ecological factors of horse therapy centers that contribute to the overall experience of horse therapy.

Negative Implications of Horse Therapy in the Literature

After her systematic review, O'Haire (2013) acknowledged the overwhelming success and benefits of animal-assisted therapy for individuals suffering from autism, but stated that very few reviews of alternative therapy for autistic children mention animal-assisted therapy, which is likely due to the lack of peer reviewed studies on the topic and the continued exploratory nature of them; many of the studies she reviewed were plagued with threats to construct validity and weak or unproven methodological approaches. However, it can be argued that this is because the

field of study is still young, and until animal-assisted therapy emerges from the exploratory state, established theories and methodologies cannot yet exist (Bachi, 2012). In addition, very few studies that were reviewed by O'Haire explored negative implications of horse therapy, so it is possible there are substantial disadvantages, but those disadvantages have not yet been explored.

There are safety concerns with animal-assisted therapies. Animals can be unpredictable, and not all people enjoy being around them (due to fear, allergies, or a general dislike for animals). Some people are not physically suited to ride, and the movement atop a horse could cause severe injury (EAGALA, 2010; PATH, 2015). In these cases, some participants might be limited to groundwork with horses. Horses can be physically dangerous if they bite, bolt, rear, or buck. Some people are naturally afraid of horses, and so, any type of contact with them might cause severe fear and anxiety, causing any health benefits received under the theories and models of hippotherapy, therapeutic riding, equine-assisted psychotherapy, PATH, CanTRA, and EAGALA to be cancelled out or overshadowed. The dangers of animal-assisted therapies are not just limited to horses. Dolphin therapy involves swimming, which poses a risk for drowning, and dog-therapy has the risk of bites or attacks. There are many safety threats and unexplored risks with animal-assisted therapy, and the potential of those risks may outweigh animal-assisted therapy benefits, depending on the patient and what is at stake. It is important to mention, however, that PATH (2015), CanTRA (2017), and EAGALA (2010) operate under a strict code of safety and ethics, and in order for instructors, horses, and horse therapy centers to become accredited, they must all pass these strict codes of safety and ethics, with regular reviews and accreditation renewals. Before therapy is administered, participants or their guardians must sign waivers that outline inherent risks to the therapy.

Ecological Factors of Horse Therapy Centers

During her systematic literature review, O'Haire (2013) commented on the lack of knowledge on the logistics required to operate horse therapy centers and their long-term feasibility in communities. O'Haire reported that one of the downfalls of animal-assisted therapy is the complex, multidisciplinary elements required to facilitate it. The literature is currently devoid from ecological perspectives on horse therapy centers, but there are many general interest articles on horse farms and horse keeping, in the form of environmental reports, resourcing, basic economic breakdowns, staff requirement, and general resourcing. The ecological factors and impacts listed below are not meant to be exhaustive, and they merely serve as a compilation of possible factors derived from the general-interest literature, as they might relate to horse therapy centers. A goal of this study was to collect specific information on the impacts of horse therapy centers in communities by speaking with local ecological, environmental, equestrian, and economic experts within the community where the horse therapy site is located.

Advantages. Horses require large, natural areas of land for turnout pastures and areas for exercising, including wooded trails (Bolte, 2014). Under proper land management, horse farms protect and provide wildlife, biodiversity, and natural habitats, especially for wetland and forest dwellers (Bolte, 2014; Jump, 2015). Horses are typically watered from closed-watered systems (troughs and water buckets), which means watersheds, groundwater, and streams are protected and left to flow naturally and recharge (Bolt, 2014; Jump, 2015). In these ways, horse therapy centers can indirectly serve as quiet, pastoral settings (and purposeful protected land reserves) for local communities. Therapeutic horse models like EAGALA (2010), CanTRA (2017), and PATH (2015) also offer services to the general public interested in self-improvement; the horse

therapy site is considered a public place and offers pastoral enjoyment, learning, and volunteer opportunities to almost anyone.

Horses can be high-consumers, and running an accredited horse therapy center that complies with all safety and program protocol is expensive and time-consuming, as is meeting the demands of the upkeep and maintenance of a general horse farm. However, in 2005, the American Horse Council reported that the U.S. horse industry accounted for 460,000 full-time jobs, which added $39 billion to the economy and generated $1.9 billion in taxes (Jump, 2015). Horse therapy centers (with horse barns) support local farmers (for the hay, straw, and other natural products that horses require), and in turn, local farmers with suitable horses and/or facilities may be able to offer space for horse therapy centers to launch quickly under the supervision of qualified staff (The Government of Western Australia, 2002). This provides farms with supplemental income – an asset that would be beneficial to many who are struggling (Shere, 2012). Horses, farms, and therapy centers are also labor-intensive, requiring horse caregivers, farm laborers, certified therapy professionals, management, and general staff on a full-time, round-the-clock basis, which provides many job (and volunteer) opportunities for people of all ages (Bolte, 2014). Depending on the size of the horse therapy center and the scope of the facilities, there may be space for regular horses, horse boarding, and riding instruction business to take place as well, which provides additional learning and enriching experiences involving animals, especially in traditionally urban areas.

Another blatant advantage of horse therapy centers is animal rescue. Many retired, unwanted, injured, abused, and suffering horses are adopted by therapy centers and given a second chance at life by becoming therapy horses (EAGALA, 2010; PATH, 2015). This takes

local burdens off other humane-organizations, like human societies, animal control, and slaughterhouses that often lack equine-specific knowledge on what to do with or how to manage unwanted horses. Most importantly, horse therapy centers provide a safe haven for horses (and other animals), where they are well-cared for, earn their keep, and serve the special needs children (and adults) within the community.

Limitations. Horses and farms are expensive; horses eat large amounts of hay and produce manure and other waste that requires labor-intensive care, management, and disposal (Shere, 2012; The Government of Western Australia, 2002). However, after a few years of turnover, this manure can be turned into compost for gardens or agriculture, though careful manure management is important and required to ensure the protection of local water sources and habitats, and there is always concern for residential areas that may not appreciate the smell or accumulation of insects, which sometimes occurs around manure-dump and composting sites (Shere, 2012). Horses also require regular and expensive veterinarian, blacksmithing, dentistry, and other health care services. Farm maintenance requires specialized equipment (tractors, manure spreaders, arena drags, etc.,) and its upkeep.

It is unclear how much local therapy centers cost or charge for therapy and what other costs might be involved for families accessing it. It is possible that accessibility to horse therapy centers may not improve access to horse therapy because of costs. More information was needed and sought after in this study regarding the financial accessibility of horse therapy for special needs children.

In addition to traditional horse and farm maintenance expenses, horse therapy centers require specialized equipment and standards to maintain grounds, facilities, horses, programs,

and equipment, in order to accommodate a wide-variety of special needs participants and meet accreditation standards. Running special needs facilities can be extremely expensive. Horse therapy is also labor intensive. Horse therapy teams that are accredited under the EAGALA (2010) model require at least two professional members per therapy session per child, and many PATH (2015) and CanTRA (2016) programs require one therapeutic riding instructor and two ground assistants to ensure rider safety. Offering multiple lessons a day supervised by professionally trained and accredited staff (who are required to pay for and meet continuing education standards), along with the time and staff required for basic horse and farm maintenance, will involve an expensive pay roll. It is possible that community initiatives are not able to support such a high-cost operation, despite the overwhelming evidence that horse therapy centers do seem to contribute to health, well-being, and quality of life for special needs children, adults, and their families (Hallberg, 2008). However, Benda et al. (2013) argued that one indirect benefit of CanTRA's, PATH's and EAGALA's commitment to safety and immaculate facility-keeping is low insurance. Because horse therapy has been made so safe – a result of organizations' strict commitments to ethics and safety codes – insurance rates for horse therapy centers tend to be quite low.

Proposed Contribution of a Qualitative Study

Although horse therapy is a type of medical treatment, it involves the use of horses, which are not akin to a drug or a traditionally-clinical model of therapy administration, where cause and effect can be easily measured or quantified in laboratory settings or trials (Granados & Agís, 2011). Most often, horse therapy does not solely treat one symptom or its cause; rather, horse therapy is holistic, requiring patients to engage physically, mentally, and emotionally

(which often translates into collective physical, mental, and emotional improvement), even if there is a strictly physical, mental, or emotional focus during the therapy (Favali & Milton, 2010; Hallberg, 2008). In this way, horse therapy may have comprehensive health and well-being effects even though it may be used to treat a single symptom, ailment, or condition.

Benda et al. (2003) and Shurtleff and Engsberg (2010) found that cerebral palsy patients had improved mobility after experiencing several sessions of therapeutic riding, but it is unclear if and how the general happiness and enjoyment of riding (which the researchers observed in their patients) may have also contributed to health and well-being – such effects would be hard to detect in a quantified study. For example, although a permanently handicapped child may never walk again (in spite of horse therapy), simply bonding with a horse and/or experiencing the sensation of walking independently may be life-changing for that child and improve mental and emotional states of self-esteem, independence, happiness, and confidence. Riding, working, and bonding with horses are lifetime skills, and the instruction to achieve those skills is often accompanied by enjoyment and pleasure; in this way, horse therapy may provide the permanently disabled child with an overall improved health outcome, even if the child remains permanently physically handicapped with little or no physical improvement from riding (Bachi, 2012; Favali & Milton, 2010; Hallberg, 2008). However, happiness, enjoyment, and pleasure contribute to overall well-being, and every time a child rides or work with horses, general horse skills are being developed. If more horse therapy centers are made available in communities – a permanently disabled child (or adult) would always have an outlet to experience positive or pleasurable feelings that contribute to wellness by utilizing learned horse therapy skills to maintain the health and well-being specifically achieved through contact with horses. Therefore,

riding and/or working with horses as a skill or experience may be a previously unexplored health effect of horse therapy.

Riding, relating to, and bonding with horses is a mystical experience, and it is possible that the millions of biochemical and physical reactions, mechanisms, and energy defining the synergistic relationship between horses and humans may never be fully understood (Granados & Agís, 2011; Hallberg, 2008). Horse experts and enthusiasts tend to argue that horses – like humans – have souls that need and understand abstract, immeasurable notions like love, purpose, compassion, and guardianship, which are entities horses and humans exchange in order to bond, overcome challenges, and complete the types of tasks assigned in horse therapy (Hallberg, 2008). If these claims are true, horse therapy is not entirely quantifiable because, while its mystical components will manifest in the human experience, they will probably not manifest in wholly measurable or explicable ways, in terms of science. A qualitative study on horse therapy is insightful; the literature is void of information on how horse therapy is perceived by children and their families and what can be done to enhance, sustain, and refine their experiences to secure the best possible experiences and health outcomes.

Because there are an infinite range of possible perceptions for health and well-being, and because the perspective of children has not been well-explored in the literature, a qualitative study also ensures openness, prevents shaped or pre-conceived notions or biases, and allows for any type of special needs family to participate. Similarly, the ecology of horse therapy centers have not been studied at all, and it is possible that aspects indirectly related to horse therapy (like the pastoral environment, the peacefulness of the farm, or the close proximity of nature) may also be elements children equate to the overall experience with horse therapy and its effect on

health and well-being. However, the benefits of these factors may be cancelled out by other factors (such as physical safety risks in working with horses, waste management issues or land scarcity), as identified by local horse, community, and environment experts. The goal, then, for this study, was to conduct an exploratory qualitative study to better understand the scope and general relationship of these factors, in addition to providing an analysis on the ecological impact of horse therapy centers as public health initiatives.

Summary and Conclusions

One of the most prominent themes in the literature on horse therapy is the lack of literature on horse therapy (Bachi, 2012; Klontz et al., 2007). Horse therapy remains a relatively new area of study, and the perspective of special needs children (along with the perspective from families and horse therapy teams) is missing, as is an ecological perspective on horse therapy centers. Filling both voids was an attempt to provide an enhanced understanding on the experience of special needs children and their families, answer questions about how the therapy affects health and well-being, and find out what important ecological factors impact communities that choose to support this alternative therapy as a public health initiative. It is suggested in the literature that the physiological motion of riding horses is therapeutic in a number of ways (Bass et al., 2009). Horses also bring many additional mental, emotional, and psychological benefits to special needs children, including happiness, improved self-esteem, confidence, pride, friendship, acceptance, greater emotional stability, greater focus, and enhanced learning (Bass et al., 2009; Chalmers & Dell, 2011; Gabriels et al., 2012). All of these factors ultimately impact health and well-being.

However, the literature is devoid of information that directly recounts the experience and perceived therapy impacts of special needs children (Klontz et al., 2007). Many quantitative research teams also expressed their remorse in failing to document this and/or include descriptive feedback from parents (Bass et al., 2009; Ewing et al., 2007; Gabriels et al., 2012). The purpose of this study's methodology was focused on the collection of interviews, insight, and commentary from willing family members with children currently involved in horse therapy, adults who underwent horse therapy as children, and horse/horse-therapy ecology experts. The ecological impacts of horse therapy centers is another topic missing from the literature, which highlights a need for further inquiry and improved understanding of horse therapy. Chapter Three presents the exploratory plan for inquiry, the research design, and the methodology that were employed to accomplish these study goals.

Chapter 3: Research Method

Introduction

The literature on horse therapy is limited in information on health and well-being outcomes from the perspective of special needs children, their families, and the horse therapy teams who partake in the therapy (Ewing et al., 2007; Gabriels et al. 2012; Hallberg, 2008; Ward et al. 2011). The purpose of this study was to explore the direct experiences of special needs children and their families in horse therapy and to better understand how their health and well-being are affected by it. It is important to mention that a child may not be physically or mentally helped by horse therapy based on clinical measurement. Bass et al. (2009) and Gabriels et al. (2012) suggested that the enjoyment and experience of working with horses in horse therapy is typically a pleasurable interaction for children, and that pleasurable interaction contributes to overall improved well-being (Bass et al., 2009; Gabriels et al., 2012; Halberg, 2008). Even if horse therapy has negligible effects on health, it still has intrinsic value in the lives of special needs children (and adults; Hallberg, 2008). Therefore, the second purpose of this study was to explore the ecological impacts of horse therapy centers – which is the first study of its kind – in order to provide interested communities with information on an alternative option (horse therapy) for special needs family care and support. In this chapter, the research design, study rationale, and my role as a researcher are discussed, followed by a description of the methodology with exact descriptions of instrumentation, the data analysis plan, and corresponding issues on ethics and trustworthiness.

Research Design and Rationale

To fulfill the dual purpose of the study described above, data was collected and analyzed based on the following four research questions:

RQ1: What are the physical, mental, and emotional experiences (as they relate to horse therapy) of children and their families who are involved in horse therapy?

RQ2: What are the health and wellness effects special needs children experience as a result of their horse therapy session(s)?

RQ3a: Do special needs children/families associate horse therapy with changes in health and well-being?

RQ3b: If so, what specific factors are positively and/or negatively associated with health and well-being for special needs children who undergo horse therapy?

RQ4: What are the ecological requirements, implications, and public health potential of horse therapy centers, specifically in terms of environment, economics, land management, community development, and horse therapy administration?

Data were collected using instrumentation that had been designed to explore and inquire based on the central phenomenon of horses, and more specifically, the healing power of their movement (under the theories of hippotherapy and therapeutic riding) and the therapeutic connection and interaction with horses (based on hippotherapy, therapeutic riding, and equine-assisted psychotherapy, as umbrella theories and approaches; CanTRA, 2017; Granados & Agís, 2011; Hallberg, 2008; PATH, 2015; EAGALA, 2010). In the literature, this central phenomenon, as it applies to horse therapy, is linked to improved health and well-being for special needs children, though this conclusion has typically been limited to basic quantitative

inquiry and third-party assumptions (Granados & Agís, 2011). To understand the experiences of special needs children (who are now adults) and special needs families involved in horse therapy, and to explore how these experiences contribute to (or deter from) overall health and well-being for special needs children and may drive local public health initiatives for special needs family support, the qualitative research tradition included a focus on phenomenology, in order to document and account for experience first-hand, and to expound upon the contribution of horses (as the central phenomenon), as they affect health and well-being. Ethnography was also incorporated in order to account for and synthesize any "other" contributing aspects of horse therapy (besides just the horses), such as the barn environment, interactions with family members and horse therapy team members during therapy sessions, and general "barn" culture. Grounded theory was used to organize and summarize key themes of participant experience, health and well-being outcomes of horse therapy, and the ecological factors and implications of horse therapy centers within local communities (Creswell, 1998). Data were collected through interviews.

The Role of the Researcher

Topic Choice

This researcher has grown up on a family farm training and showing horses nationally in show-jumping and dressage on the AA circuit. I currently live on the family farm with rescue horses and other animals. I first became interested in horse therapy when a special needs family came for a visit at the farm and reported noticeable changes in their special needs child's physical and mental well-being after that child engaged with the animals on the farm, specifically, a rescue zebra and an elderly horse. The family asked to return for future visits,

explaining that the farm experience and the time spent with the horses was a welcome relief from unsuccessful clinical and traditional therapies that excluded other members of the family and did not seem to comprehensively benefit their special needs child. After this encounter, I began to research the possibility of horse therapy as a future career to help special needs children and their families. When I discovered the newness of the field and the voids in the literature, I wanted to contribute. Therefore, I chose horse therapy as a dissertation topic.

Safety Protocol and Methodology Disclaimer

Horse therapy centers are public places that depend on the support of community members and volunteers to provide specialized sessions that help special needs individuals. Most horse therapy centers are open to all types of special needs individuals, their families, and volunteers who wish to help support them, which means regular public functions and social media interactions are critical and welcome activities facilitated by the center directors, themselves. Furthermore, special needs families involved at the centers are often highly social with each other and with public volunteers when it comes to sharing their stories, sharing the joy of their children who receive the horse therapy, and figuring out ways to expand horse therapy as a field, so that more families might benefit. As a trained PATH and EAGALA volunteer with over a year of experience as a horse leader and side-walker, I have gotten to know many families, their special needs children, and their horse therapists across North America. Volunteering at PATH, CanTRA, and EAGALA certified centers requires a working understanding of each center's and each horse therapy team leader's safety and ethical standards, the circumstances of each participant, the horse, the role of other volunteers in the therapy team, and participating parents or guardians (CanTRA, 2016; EAGALA, 2010; PATH, 2015).

Working with and around horses also involves a certain level of danger and risk (Hallberg, 2008). Horses are large animals, and they are instinctively flight animals, which means they can spook (Ainsie & Ledbetter, 1980)). Safely working with children and horses (and in turn, guaranteeing their safety) requires years of experience, knowledge, and skill (PATH, 2015). PATH-, CanTRA-, and EAGALA certified centers and their resident certified therapists and volunteers (like me) are required to follow stringent safety and ethical regulations. Parents and guardians sign a series of wavers, and when children are riding at PATH and CanTRA centers, children must wear protective head gear, a harness, and are accompanied at all times by two or three trained, ground-aid volunteers who walk alongside the horse and hold onto the child (CanTRA, 2016; PATH, 2015).

At least one certified clinical therapist with a specialization and certification in equestrian therapy supervises the child, the horses, and these volunteers (CanTRA, 2016; PATH, 2015). This protocol is to ensure optimal safety. All therapy team members (such as me) are trained to regularly engage the child in exercises directed by the therapy team leader and to offer encouragement and coaching, answer questions, and seek feedback to assess the child's experience (CanTRA, 2016; PATH, 2015). Therapy team members also observe the horse, checking to ensure all equipment the horse is wearing or working with is not negatively affecting the horse and that the child and the horse are interacting positively – neither one hurting, harming, or distressing the other (CanTRA, 2016; EAGALA, 2010; PATH, 2015).

Parents and guardians are invited to participate during various elements of horse therapy (PATH, 2015). For example, a special needs child may be placed backwards on the horse and asked to roll a soft ball down the horse's rump and into a family member's hands while the horse

is moving. The family member follows at a safe distance behind the horse and tosses the ball back to the child. The exercise repeats. As a trained volunteer, I am under the supervision and instruction of the horse therapy leader, and I have been trained to immediately respond to any needs of the participants, their parents or guardians, the safety or well-being concerns of other volunteers and the instructor, and any significant body language exhibited by the therapy horses.

However, despite strict international horse therapy standards upheld by all CanTRA/PATH/EAGALA certified horse therapy centers and invitations and approval by horse therapy directors to host a study at two Michigan-based PATH certified centers, Walden University's IRB did not allow me to conduct observation or research volunteer work because the governing body believes it to be obtrusive and harm causing. In order to appease Walden's IRB, I could no longer adhere to the methodology recommended and endorsed by the horse therapy directors active in the field, and so both the recruitment of participants and data collection plan changed drastically, which will be discussed in later sections.

Qualifications

Prior to beginning this study, I was already an approved horse therapy volunteer at the horse therapy center sites in Michigan where the directors of those centers then agreed to host my study and had fully endorsed the original data collection plan (before IRB required a different one according to Walden's IRB rules and regulations), and I have undergone training and experience sessions according to the centers' protocol. Due to prior experience in Michigan and California as a horse therapy volunteer, I am approved (and signed off) as a PATH horse therapy volunteer (side-walker/ground-aid and horse leader) and an EAGALA volunteer to assist equine specialists and help with horse care and management. Furthermore, as both a researcher

for this study and a horse therapy volunteer, I was still able to analyze data with a comprehensive understanding. My practical, hands-on expertise with horses and horse therapy is a great strength as the researcher and writer for this study, but it may also be a biasing weakness in terms of direction and interpretation of the methodology and resulting analysis (Bachi, 2012). I have done my best to offset any personal inclinations with additional professional references and/or address any personal experiences or judgments with explicit and outright acknowledgement. All data analyses have been subject to peer review by Dr. Vasileios Margaritis – my dissertation chair – to ensure inter-coder agreement. Additional steps to ensure validity and trustworthiness are discussed below, in the *Trustworthiness* section of this paper.

Methodology

Population, Sampling, and Sample Size

The primary population for this study was adults (age 18 or older) who underwent horse therapy as children and parents and/or guardians of special needs children who currently receive horse therapy. Most horse therapy is not covered by health insurance, and so, families must pay out of pocket (American Hippotherapy Association, 2010). Horse therapy is not well-known to the general public and access to horse therapy centers can be limited. To compensate for this, special needs cases of all types were accepted in order to prevent exclusion and to maximally explore the health and well-being effects of horse therapy for a wide variety of special needs children, ranging in both type (physical, mental, and/or emotional) and severity. Because of the changes required by IRB, I lost all opportunity for local participant recruitment and in-person interview opportunities because the therapy center directors did not agree with the new methodology required by IRB and they took offense to IRB's comments that the observation and

volunteer work caused "harm" to the kids they observe and volunteer for every day, so I no longer had access to any local centers for my study because they all opted out. Therefore, under the new methodology and without any locally accessible participant pools, I had to send out and post fliers and recruitment emails to a number of online horse therapy forums and horse therapy associations across North America. Consequently, all interviews were conducted by email, after consent forms were received.

In order to preliminarily address both the long-term and short-term effects horse therapy has on health and wellness, there was not any limits put on a participant's experience with horse therapy (even with the adults who experience horse therapy as children); any exposure level from past horse therapy participants and special needs parents/guardians was accepted, ranging from one-time participants to those who were well-seasoned. The only criteria for participating in this study was that each adult who experienced horse therapy as a child was considered "special needs" in some way at the time, simply meaning that as children, they were exposed to horse therapy in an attempt to improve health, growth, and/or wellness in some way (as opposed to general horse encounters, which may be pursued purely for fitness and/or recreation). Any parent/guardian with a child enrolled in horse therapy at an accredited center automatically met this study's only criteria for participation by default, as accredited centers only offer horse therapy sessions to special needs individuals. A combination of random and purposeful sampling occurred in order to compose the study sample size; after recruitment posts and emails were sent to various organizations and centers across North America, all inquiries were responded to and quite often, after these interested participants became informed about the study, they spread the word to their eligible friends and acquaintances. (Creswell, 1998). It is important

to note that in order to be approved for horse therapy participation by accredited centers, all parents of child participants must present a doctor's approval note for horse interaction and wear an approved helmet. Each child usually receives a free 30-minute assessment by a licensed horse therapist practitioner to determine the best type of therapy and/or lesson plan, but so long as the child meets all safety criteria, no case is turned away (PATH, 2015).

Due to the sensitive nature of the study and its inquiry into the experience of special needs children involved in horse therapy, along with an ethical obligation to ensure that all adults (including those who experienced horse therapy as children) are able to provide informed consent before data collection, it cannot be assumed that every eligible adult was chosen or able to participate. The sampling goal was to recruit approximately eight adults who experienced horse therapy as children, along with eight parents/guardians of special needs children currently involved in horse therapy. This sample size was manageable, convenient, and comprehensive (a lack of criteria exclusions will enhance understanding of the breadth of impact on different special needs families and the type of children being treated). In order to prevent any surprise obtrusion to special needs families, all fliers were posted on public forums on Facebook and any recruitment emails were sent directly to horse therapy centers and/or organization directors to disseminate as they saw fit. In this way, each potential participant was reached randomly but purposefully (and ethically).

All interested parties were requested to contact me directly and then given more information about the study. The first eligible (and random) eight parties who responded from each category (adults who underwent horse therapy as children and parents/guardians of special needs children currently involved in horse therapy) were be added to the study roster. No party

was turned away during the course of data collections. When occasional parties drop out during the study, additional parties were sought after through additional posting and emails until the 16-minimum sample size was reached, with 8 belonging to each class. Each participant may have experienced a unique set of special needs circumstances and/or exposure to horse therapy, but it was assumed that each adult spoke and understood English fluently. Confidentiality was strictly upheld, but any information offered by parents on the extent of their child's special needs circumstances was fully disclosed (under fictional names), so that future researchers and general readers are aware of the uniqueness of each participating child and can decide independently as to how the effects of horse therapy for that child – in terms of health and wellness – may or may not also be unique and/or reproducible in similar cases.

Entering the Study

As previously mentioned, IRB restraints and time delays made it impossible to recruit participants locally and perform in-person meetings and interviews. Therefore, my dissertation chair approved a series of fliers and emails that I posted on EAGALA, PATH, and smaller horse therapy organization public Facebook pages in hopes of recruitment. I was also introduced to the CanTRA administration through someone who heard of my study (and the difficulties I faced with IRB). CanTRA was very willing and eager to help me with my study, and after working with the organization on an approved study recruitment email, it was sent out to participants across North America (by the CanTRA administration), and I received contact from many interested participants as a result of that. All emails were returned with more information about the study and a copy of the appropriate consent form. After it was returned to me via email (only

REAL signatures were accepted through attached photos as proof), the interview questions were emailed out to the new participant.

Everyone involved in the study or even just mentioned in the study (like the special needs children of participating parents/guardians) have been assigned fake names. Real names, phone numbers, and/or email addresses were collected from all participants for contact purposes only during the duration of the study. Upon enrollment in the study, parents were asked to briefly describe/list the physical, mental, and/or emotional conditions or challenges their children were facing before they enrolled in horse therapy. Similarly, adults who underwent horse therapy as children were asked to describe the physical, mental, and/or emotional conditions or challenges their children were facing before they enrolled in horse therapy (as children). This was an important aspect for data analysis – it was important to know the condition of the child before he/she began therapy to use as a baseline for comparison with the responses from the children as adults and the parents/guardians with children currently involved in horse therapy, based on current or changing conditions resulting from horse therapy.

For the ecological-explorative portion of this study, the goal was to recruit at least two community experts in environment, community development, economics, land management, and horse therapy center administration as consultants for information (through interviewing) on the ecology of a horse therapy center and its impact on the community. Recruitment was initially accomplished through fliers posted on relevant public Facebook pages and through local horse acquaintances who knew me and had heard about my study. Unexpectedly, some individuals were able to expertly answer questions on more than one subject, and several horse therapy administration experts (as a result of the CanTRA email searching for horse therapy participants)

asked to be a part of the study, even though I had already filled both slots for that category. However, they were not turned away. All experts (12 in total) were adults (over the age of 18) and spoke and understood English. Once initial contact was established through phone or email, anyone with qualifying credentials (to meet "expert" criteria) was accepted into the study and are identified by their job titles in order to ensure confidentiality. All interviews were conducted via email.

Saturation and Sample Size

Saturation and sample size in qualitative studies is often debated. Accurately determining sample size for maximum saturation is especially difficult because multiple constructs (such as phenomenology, ethnography, and grounded theory) are incorporated into this study. Experts like Creswell (1998) and Morse (1994) recommended between 25 and 30 participants for maximum saturation under these conditions, though Bertaux (1981) argued that 15 participants are sufficient for sampling for all aspects of qualitative research. Within the literature on horse therapy, Champagne & Dugas (2010) and Favali & Milton (2010) explored the experiences of special needs individuals using as few as two and five participants, respectively. As mentioned previously, it can be hard to recruit adults who received horse therapy as children, as well as parents and guardians of children currently involved in horse therapy, because horse therapy was far less common in even recent decades and only small numbers of children may be currently enrolled at any given center (and not every family would want to or be able to participate).

The goal for sampling was to maximize saturation – or, in other words, to reflect a thorough investigation and derivation of meaning from the data, in relation to the research

questions being asked (Creswell, 1998). This requires an adequate sample size. By attempting to recruit approximately eight adults who underwent horse therapy as children and by allowing any type of special needs family currently involved in horse therapy to be a part of the study, (though no adamant party was turned away), anyone and everyone who observed the fliers or read the organization approved-emails was welcome to participate. Another approach to this study would have been be to create a representative sample of participants from multiple therapy centers in a single location – such as the Midwest, for example. However, as previously stated, the limiting methodology factors set by IRB deterred many horse therapy centers from wanting to participate. IRB removed the right for children to participate in interviews or be observed in their already public horse therapy sessions.

Therefore, children could not be interviewed at all for this study, so their parents and guardians were interviewed, instead. However, factoring in parents or guardians from many other therapy centers (under different circumstances with IRB) may not have created any more varied (in type and severity) of a sample than by focusing on random and purposeful sampling through public posts and organizational emails spread across an entire continent. Detailed information on each child's special needs circumstances (based on the information their parents and guardians provided) is provided, so that readers can understand the diversity of cases that are treatable by horse therapy.

Justification

Horse therapy is highly adaptable to the needs and circumstances of each child, and therefore, even a very large sampling would still produce personalized and specific results – the term *special needs* applies to an infinite number of cases, and the goal of horse therapy teams are

to treat each case individually, without generalization (Granados & Agís, 2011). Horses – the primary catalysts in horse therapy – do not generalize, and while the therapy itself is believed (and has been proven) to be useful in treating a wide range of special needs individuals, the way in which it comprehensively accomplishes improved health and well-being will never be the same for any child (Granados & Agís, 2011). Only specific examples can be provided and very loose and general parameters determined (Hallberg, 2008).

Ecological Sampling

Exploring the ecological effects of horse therapy centers within a community is the first study of its kind (Jump, 2015). Horse therapy centers are fairly new entities – so it is possible that the 12 experts chosen did not have a thorough understanding on all of a therapy center's long-term impacts on a local community. Every horse therapy center is different due to factors like weather, region, and land availability; no center will ever consist of the same ecological factors that impart the same ecological effects on a community (Jump, 2015). Therefore, 12 community experts should have been sufficient for saturation to begin basic exploratory inquiry regarding the ecological impact of the horse therapy centers, which is information that can also be used to compare and contrast the positive and/or negative health and well-being outcomes experienced among the sample of horse therapy families and adults interviewed in the first part of this study. The resulting ecological information is not meant to be (and will not be) applicable to all therapy centers in the world, but it does serve as a way to help inform interested communities on possible resources, infrastructure, challenges, benefits, and disadvantages of beginning and operating horse therapy centers for special needs citizens.

External Validity

It is important to note that any certified centers referenced in this study were run and managed by many different certified horse therapists that undoubtedly incorporate multiple types of therapy into each session (besides just PATH, CanTRA, and/or EAGALA techniques). For example, elements of both therapeutic riding and hippotherapy may be incorporated into a therapy session (which aligns with traditional PATH and CanTRA methods), but as a brief break from structure, the child may be allowed to ride leisurely without instruction, and upon dismounting, the child may be allowed to help groom or feed the horse (which align with EAGALA methods). However, supplementary approaches and genres of lesser known horse therapies might also be applied, and the degree to which this occurs largely depends on the expertise and personal preferences of the therapy team leader, the experience of the therapy horse, and the needs and desires of the child and his or her parents (Granados & Agís, 2011; Hallberg, 2008). Depending on the type of center, other animals might also be incorporated into therapy (such as dogs, mules, pigs, cows, or cats).

Each horse therapist and/or instructor within every therapy center offers a unique approach and application to horse therapy; even though the child's needs are the primary determinant of how the therapy is applied, the approach is entirely dependent on the horse therapy leader working within the safety and ethical protocol of the center's certifications. This again means that each child and each therapy center will never experience or produce completely repeatable or generalizable results, though ultimate effects on health and well-being may be detectable and recordable. Although this is an alternative and controversial approach compared to many types of traditional medications and therapies, the uniqueness and adaptability of horse

therapy is not only justification for the proposed sample sizes and strategies, but it is also an explanation for why horse therapy has been thought to be so successful and beneficial by past researchers and poses a unique public health support system for families with special needs or high needs children (Hallberg, 2008). Special or high needs individuals, by definition, do not fit into the generalizations and typical constructs of the general public. They experience a unique set of circumstances and require a unique type of aid and support in order to thrive.

Horses adapt by nature – and it is through the horse's ability to adapt to the child and the horse therapy team leader's ability to adapt the therapy to the child's needs that a wholly unique (and presumably) beneficial therapy session is designed and implemented (Hallberg, 2008). Although the purpose of this study was to explore the health and well-being effects of horse therapy for special needs children, it is impossible to extend generalizations outside of the scope of each child's unique circumstances. Instead, the purpose of this study was to explore each child's experiences and how health and well-being are affected, given the unique circumstances of the child and the unique way in which the therapy is molded and administered. Its second purpose was to explore how a horse therapy center affects the particular ecology of its community – which, in turn, is another unique entity. No center or community is ever alike.

Instrumentation

Due to the uniqueness and multi-faceted aspects of this study and to protect the vulnerability of the participants in this study, all instrumentation was researcher-developed to ensure sensitivity and to maximize thoroughness. For interviews with adults who underwent horse therapy as special needs children and parents/guardians of children currently involved in horse therapy, an interview protocol sheet was used and all interviews were conducted and

recorded via email. The following section is an in-depth summary of each instrument, its phasing placement, its justification, verification of content validity, and safety and ethical procedures during use.

The interviews for adults who underwent horse therapy as children and parents/guardians of special needs children currently involved in horse therapy were created using the literature from Bass et al. (2009), Gabriels et al. (2012), Ewing et al. (2007), Dingman (2008), Ward et al. (2011), Favali & Milton (2010), Hallberg (2008), and Granados & Agís (2011) to identify potential contributory themes related to the overall phenomenon – as well as all major ethnographic elements – for content validity assurance. The original condition of each child (as reported by the parents/guardians) was asked about and listed for future reference (but names have been changed to assure confidentiality). Adults who underwent horse therapy as children were asked about the condition(s) they experienced during the time of therapy.

Interviews

Because observations or field notes from volunteer work are not permitted by IRB, the only way to truly qualitatively assess experience and collect data on the phenomenon and ethnography of horse therapy as it affects the health and well-being of children and their families (which addresses research questions one, two, and three) was to interview adults who underwent horse therapy as children and parents/guardians with children currently involved in horse therapy. Interviews were conducted by email, first due to logistics, but also in order to limit any intrusiveness, pressure, or imposition due to the sensitive nature of the topic and to allow sufficient and convenient time for participant contemplation.

Adults who underwent horse therapy as children.

The primary purpose of this study was to understand the experience of special needs children and the perceived health and well-being effects associated with horse therapy. Because IRB did not permit interactions with these children, interviews with adults who underwent horse therapy as children was the next viable way to obtain direct experiences of those directly involved with horse therapy. Because adults who underwent horse therapy may have been part of a vulnerable population as a child (and still may be part of one as an adult), it is important to protect their vulnerabilities, while honoring, recognizing, and fostering their abilities to contribute (Bass et al., 2009; Dingman, 2008; Gabriels et al., 2012). To facilitate this, only adults who were able to give full informed consent independently were interviewed. Questions were open-ended and formed without assumption to assure content validity – any answer was possible and any answer was valid (Creswell, 1998). The view of the special needs child has not been well explored in the literature, and so, the only acceptable assurance for content validity was asking questions of the adults that will provide a baseline of content on feelings, experience, preference, health, and well-being – as they relate to horse therapy from the perspective of the child – for more specific studies in the future, which might eventually facilitate the interviewing of children as children (Bass et al., 2009).

It is also important to point out that while interviewing adults about their experience does involve risk of recall bias, they have both the developed/matured vocabulary, descriptions, and hindsight to explain and describe the way horse therapy impacted them as children that children, themselves, may lack. In other words, children may be fully aware and wholly feeling of their experiences and perspectives of horse therapy but unable to translate those experiences and

perspectives into words (due to their age), nor can they fully know or understand the true impact of the therapy (also due to their age and lack of long-term perspective/experience). Therefore, a unique advantage of interviewing adults was that they are likely to possess both entities – the feelings/experiences/memories involved with horse therapy as a child, but the adult vocabulary and insight to describe it and summarize its overall effects.

According to Bass et al. (2009), Dingman (2008), and Gabriels et al. (2012), working with therapy horses is a seemingly metaphysical experience, where physical stimulation from the horse may cause mental and emotional stimulation. Similarly, exercises that focus on mental and/or emotional stimulation, especially those involving riding, will, by default, cause physical stimulation. Bass et al. (2009) also argued that the pure excitement, happiness, and enjoyment participants experience while riding also contribute to health and well-being; this may be why some children tolerate more challenging or difficult exercises – the pleasure of being with horses overshadows, comforts, and/or eases temporarily-negative implications of therapy. Similarly, if a child does not enjoy the horses, this may override any physical or mental stimulation initiated by the horses. Based on the observations, theories, and recommendation of and by Bass et al. (2009), Dingman (2008), and Gabriels et al. (2012), the following interview has was formulated and conducted via email. If any prompt or question caused discomfort, there was be no obligation for participants to address it:

> P1. Please explain why (and at what age) you were enrolled in horse therapy as a child and please elaborate upon any physical/mental/emotional/psychological circumstances that you were experiencing before starting horse therapy.

P2. Please explain what your experience with horse therapy was like as a child. For example, did you enjoy horse therapy? Did you look forward to it every week? In what ways did it impact your life? How long were you involved with horse therapy (how many weeks, months, or years?)

Q1. As a child, did you find that horse therapy affected your health and/or well-being? If so, how was your health and/or well-being affected or changed?

Q2. Did your involvement with horse therapy as a child have any impact on your immediate family (parents, siblings, etc.,) in terms of family bonding, support, understanding, and/or overall cohesiveness?

Q3. As a child, what were the immediate effects of horse therapy, in terms of your health and/or well-being?

Q4. As an adult, what were/are the long-term effects of horse therapy (if any) as result of undergoing the therapy as a child?

Q5. As a child, what did you like about horse therapy? What did you dislike?

Q6. Would you recommend horse therapy for special needs children and their families? Why or why not?

Q7. Are you still involved with horses as an adult? Why or why not?

Q8. What improvements do you think could or should be made to horse therapy?

Q9. Do you think communities should invest in horse therapy centers as public health initiatives? Do horse therapy centers as public health initiatives have anything to offer special needs families? Please explain your answers.

Q10. Is there anything you would like to add about your experience with or knowledge of horse therapy?

Parent/Guardians of children currently involved with horse therapy.

Because one purpose of this study was to better understand the perspective of families (parents/guardians) who have special needs children enrolled in horse therapy, an interview consisting of prompts and questions was formulated to explore their personal experience. Parents/guardians were asked to provide perspective on their child's experience with therapy. This strategy was chosen for two reasons: it is assumed that parents/guardians know their child best, next to the child himself/herself, and so, they offer a unique perspective on the experience of the special needs child. They also know the history and subtle changes (if any) that may arise from their child during or after therapy, and this may be why they continue to keep their child enrolled, even without obvious feedback (to an outside observer, the horse therapy teams, etc.) or recollection from a child (for example, an eight year-old child will likely have no recollection of progress made in horse therapy as a three year-old, but a parent/guardian would). Second, the child's perspective may not always be a practical one, especially from a health and well-being stand-point, though this is not to say the child's perspective is not still important or valid. For example, a young, autistic child may not realize that his or her focus is improving through concentration exercises that occur while he or she is riding – the child may only report that riding is fun and entertaining – but from a parent's or guardian's perspective and/or translation of their child's experience, better focus is a concrete result of horse therapy, which has positive implications, in terms of overall well-being. Therefore, the experience and the perspective of the parents/guardians are vital to fully exploring and understanding (and/or confirming) the

experience and perspective of their child. The prompts and the questions asked of parents/guardians are personal versions of research questions one, two, and three.

The interview prompts and questions were worded to inquire on personal experience, overall perspective, and observations concerning their children, horse therapy, and effects related to health and well-being. Short answers to all prompts and questions were encouraged. Parents/guardians had the interview sent to them via email. If any prompt or question caused stress or discomfort, parents/guardians did not have any obligation to address it.

P1. Please provide a description of your child's physical, mental, emotional, and or/psychological conditions prior to horse therapy.

P2. Please describe your physical, mental, and emotional experience as the parent(s)/guardian(s) of a child involved in horse therapy.

P3. From your perspective as parent(s)/guardian(s) of a child involved in horse therapy, what is the physical, mental, and emotional experience of your child as he or she engages in horse therapy on a regular basis?

P4. From your perspective as parent(s)/guardian(s), please describe the general experience of special needs children involved in horse therapy.

P5. As it relates to horse therapy, please describe the general experience of families with special needs children involved in horse therapy.

Q1. How did you hear of horse therapy?

Q2. Why did you decide to enroll your child in horse therapy?

Q3. How long has your child been involved in horse therapy?

Q4. How has your child's health and/or well-being specifically been affected as a result of horse therapy, if at all?

Q5. How has horse therapy affected your family, as a whole (if at all)?

Q6. How do you think horse therapy specifically affects the health and/or well-being of special needs children, if at all?

Q7. From your perspective as parent(s)/guardian(s), what are the health and/or well-being advantages for special needs children engaged in horse therapy?

Q8. From your perspective as parent(s)/guardian(s), what are the health and/or well-being disadvantages for special needs children engaged in horse therapy?

Q9. Is there anything other information relating to the experience or health and well-being effects of horse therapy for special needs children, their families, horse therapy teams, or horses that you think is important to add?

Compensation

Once the interviews have been completed by the participants and they have sent their response to me via email, I replied by acknowledging receipt and completed a member checking. Any discrepancies were addressed. If any aspects of the collected data required additional clarification later on, those issues requiring follow-up were addressed via email. Once all the data were checked for clarity and any concerns had been resolved, participants received a thank you email (marking their exit to the study). Adults who underwent horse therapy as children and the parents/guardians of children currently involved in horse therapy each received two horse-related books to express gratitude, recognition, and appreciation for their time and effort (there books were sent/given to them at the time they sign the consent forms). All participants were

and are kept up-to-date on the progress of my dissertation and any dissemination that results from it.

Ecological Perspective

The ecological impacts of horse therapy centers on local communities have never been academically studied (Bolte, 2014; Jump, 2015; Shere, 2012). To begin exploratory inquiry within this field and to address research question four, 12 experts in the fields of environment, community development, economics, land management, and horse therapy center administration were interviewed. The answers from at least two experts in each field can be compared and contrasted, and their collective answers might help set a baseline for content validity.

Based on the literature, key community concerns regarding the establishment of horse farms and equestrian centers involve their impact on the environment, the economy, and land management (Bolte, 2014; Jump, 2015; Shere, 2012). In turn, community development encompasses community factors, such as sociology, humanities projects, and the protection and support of vulnerable populations, in which special needs families are included (Jump, 2015). Similarly, horse therapy administrators require a certain degree of support from communities, and by consulting with experts in administration, the strategy is to perform as comprehensive of an analysis as possible. Each interview consisted of a series of similar questions on subject matter pertaining to each professional's field of expertise. Each expert was also asked to list overall ecological factors and implications (positive and negative) for horse therapy centers. In this way, they may highlight new ecological aspects of horse therapy centers for future study. Participants were recruited through fliers posted on social media forums (posted using the same flier) that asked for the participation of qualified, knowledgeable individuals who can assess the

ecology of horse therapy centers, based on one of the five fields of expertise listed above. Some participants were recruited through mutual acquaintances who had heard about my study locally, and others came about through the generous help of CanTRA.

Potential participants contacted me by email (depending on which type of contact information is available), and in return, I sent them more information about the study, along with a consent form. Every time I received a signed consent form, I then sent out the appropriate email interview. Member checking was completed by reviewing the interview to assure content. All personal information has been kept confidential. A thank you note was emailed to mark each participant's exit from the study. All participants were and will continue to be kept up to date with the dissertation and dissemination process. Based on their respective fields, community experts were asked the following interview questions:

Community development.

Q1. How do horse therapy centers affect community development?

Q2. What are the long-term effects on community development with the establishment/running of horse therapy centers?

Q3. How does community development benefit from horse therapy centers?

Q4. How is community development inhibited by horse therapy centers?

Q5. Is there a way for community development efforts and horse therapy center initiatives to coincide? If so, how? If not, why not?

Q6. What are other ecological impacts of horse therapy centers within local communities?

Economics.

Q1. How do horse therapy centers affect the local economy?

Q2. How does the community benefit economically from horse therapy centers?

Q3. How does the community suffer economically from horse therapy centers?

Q4. What economic infrastructure do local communities need in order to support horse therapy centers? Are horse therapy centers economically feasible for communities to help support and operate? Why or why not?

Q5. Economically, are horse therapy centers good for local communities? Why or why not?

Q6. What are other ecological impacts of horse therapy centers within local communities?

Environment.

Q1. How do horse therapy centers affect the local environment?

Q2. How does the local environment benefit from horse therapy centers?

Q3. How does the local environment suffer from horse therapy centers?

Q4. Are horse therapy centers good for the local environment? Why or why not?

Q5. Can community environmental initiatives coincide with horse therapy centers? If so, how? If not, why not?

Q6. What are other ecological impacts of horse therapy centers within local communities?

Land management.

Q1. How do horse therapy centers affect land management within the local community?

Q2. Is the presence of horse therapy centers considered to be good or bad use of community land? Why?

Q3. Do community land management initiatives tend to support or deter the land and resources needed to open and maintain horse therapy centers?

Q4. What is ideal land stewardship within the local community, and is it possible for horse therapy centers to operate within this ideal? If so, how do horse therapy center startups approach and collaborate with designated land managers within the community?

Q5. What are other ecological impacts of horse therapy centers within local communities?

Horse therapy administration.

Q1. What land and resources are needed to open and maintain a horse therapy center?

Q2. What start-up costs are involved?

Q3. What maintenance costs are involved?

Q4. What staffing/volunteer support is required?

Q5. How do you acquire and care for the horses?

Q6. How do horses benefit from horse therapy centers?

Q7. What support, if any, is offered by local, state, and federal initiatives?

Q8. What more could the community do to help support horse therapy centers?

Q9. What do parents/guardians/insurance providers pay for horse therapy sessions?

Q10. What are the biggest challenges for horse therapy centers?

Q11. What are the biggest community accomplishments of horse therapy centers?

Q12. How do horse therapy centers positively affect the community?

Q13. How do horse therapy centers negatively affect the community?

Q14. What are other ecological impacts of horse therapy centers within local communities?

Data Analysis Plan and Corresponding Ethics and Validity

Phenomenology, ethnography, and grounded theory are the three conceptual constructs that were used to organize collected data into key themes that describe experiences for children and families involved in horse therapy, the health and well-being outcomes for special needs children, and the ecological impacts of horse therapy centers in local communities as potential public health initiatives. Phenomenology was the central construct; horses and horse interaction are at the core of the phenomenon of horse therapy and its effects (Hallberg, 2008). Ethnography was needed to account for the cultural aspects of horses, horse people, the environment of horse therapy centers, and their overall ecology and the way it may epitomize public health initiative (Dingman, 2008). Based on the observations and expertise of Dingman (2008), horse and barn culture significantly impact and contribute to the overall effects of horse therapy. In other words, horse therapy is partly defined by its environment – the pastoral setting, the closeness of the horses, and the facilities necessary to care for them and allow them to work as therapy horses (Dingman 2008; Hallberg, 2008). In this way, ethnography was used to assess the data that contains information that may help improve understanding on how these cultural elements – which are components of horse therapy – contribute to overall health and well-being for horse therapy participants and affect overall ecology for horse therapy centers within the greater community (Creswell, 1998). Finally, the grounded theory was used to organize the synthesized data into a logic model that is representative of the health and well-being outcomes of horse

therapy, based on the feedback from adults who underwent horse therapy as children and families currently involved with horse therapy. This can help develop or expand upon existing theories and applications related to horse therapy. The grounded theory was also used to create a tiered ecology model of community impact for horse therapy centers.

Although there was a large volume of data, it was automatically categorized based on the type of participant (adult, parent/guardian, or community expert), which helped with overall organization and data management. All data were hand-coded and then sorted based on which question they served and which theme they applied to. As previously mentioned, triangulation was used as a loose strategy for establishing dependability and credibility based on the feedback from different participants (adults who underwent horse therapy as special needs children, parents/guardians, and ecology experts). All participants were asked to aid with confirmability through member checking immediately after their interviews were complete. Transferability is left to the discretion of the reader; it is understood that "special needs" cases are widely varied, and no special needs child is alike. Therefore, doctors, nurses, and special needs families who may read the findings of this paper will have to determine for themselves if the child in their care might have similar experiences and outcomes as the special needs children in this study. To help with this determination, full disclosure of each special needs child's initial diagnosis before the onset of therapy is provided, with consent of parents/guardians. It is also understood that each horse therapy center is different – and so – the blueprint provided may not be applicable to other centers or communities.

Further Issues of Ethics, Trustworthiness, and their Procedures

Special needs children and their families are a vulnerable population, and the horse therapy leaders and volunteers that work hard to help them are also deserving of special care and consideration. The community experts recruited in this study are also civil servants – their time is valuable and their work could not be obstructed. Therefore, every precaution was taken to reduce interference of their normal activities. Participants were not recruited until I received International Review Board (IRB) approval from Walden University. The IRB approval number for this study as issued from Walden University is 06-29-16-0301831. All participants had their rights, safety, and well-being protected through informed consent. All horse therapy participants received thank you gifts for their participation, and I did and will continue to do everything in my power to ensure that their participation is a positive and beneficial experience with beneficial outcomes.

All participants knew and know me as a Walden University doctoral student, with a dissertation interest in horse therapy and with the necessary permission, credentials (as both a Walden student and a PATH/EAGALA approved horse therapy volunteer), experience, knowledge, concern, and passion to respectfully, ethically, and safely interact with them and collect data. All participants have remained completely anonymous and have been assigned fictional names. Participants knew that they had the right to withdraw from the study at any time without penalty and with any data pertinent to them destroyed without question. All benefits and risks involved with enrollment into the study were explained during the recruitment process.

All interviews were subject to member checking to ensure that each participant agrees with the content of the interview, immediately after the interview, before any data was

processed. If there were any areas of dispute or incorrectness, those areas were corrected and re-approval was sought after. The was no data requested for omission or biased revision.

My chair professor conducted primary peer review of the interview data and codes/themes to ensure the best possible inter-coder agreement and that an objective analysis of the data had been completed. At the end of the study, all notes and transcripts were and will continue to be locked and secured for 5 years. All data that does not have permission for additional use and/or release will be destroyed in accordance with Walden University's data use guidelines.

Summary

Special needs children and their families are a vulnerable population, and although the purpose of this study is to translate their experiences on horse therapy into progression of the literature, collecting data for documenting those experiences requires the utmost care and concern. The research plan and instrumentation have all been developed with the well-being of the participants in mind – the ultimate goal was to protect participant well-being and create a positive experience. The second goal was to collect usable, valid data that are contributory to the voids in the literature. The purpose of the study was to understand horse therapy as it applies to special needs children and their health and well-being, so that horse therapy can continue to be developed, revised, and fine-tuned and considered as an alternative public health initiative, in order to provide special needs family support at the local level and optimum outcomes for those who utilize it. Chapter Four presents the results of the study, as organized by each research question.

Chapter 4: Results

Introduction

The research design and methodology of this study was specifically designed to facilitate a collection of information that would fulfill its purpose, which was to reconcile research gaps and expand understanding pertaining to the health, well-being, and ecological impacts of horse therapy for special needs children. The secondary purpose of this study was to subsequently use the resulting information to gauge and potentially formulate the viability of horse therapy as a public health initiative in local communities. The research questions that were asked to begin this quest consisted of the following:

RQ1: What are the physical, mental, and emotional experiences (as they relate to horse therapy) of children and their families who are involved in horse therapy?

RQ2: What are the health and wellness effects special needs children experience as a result of their horse therapy session(s)?

RQ3a: Do special needs children/families associate horse therapy with changes in health and well-being?

RQ3b: If so, what specific factors are positively and/or negatively associated with health and well-being for special needs children who undergo horse therapy?

RQ4: What are the ecological requirements, implications, and public health potential of horse therapy centers, specifically in terms of environment, economics, land management, community development, and horse therapy administration?

This chapter will serve as a review of the data collection process, with inclusive information on the setting of the study and its demographics, details on the way in which data was collected,

how data analysis was performed, the most important part of the entire study – the results – which were provided by generous and altruistic participants across North America, and finally, a discussion on evidence of trustworthiness

Setting and Demographics

As previously mentioned in Chapter Three, approval for this study was delayed due to misunderstandings within Walden's IRB, which related to horse therapy and what the study attempted to accomplish; horse therapy, outside of the horse world, is virtually unheard of and often considered nontraditional, so it took some time to establish mutual understanding with IRB. My initial proposal was denied by IRB, and as a result, the two local Michigan horse therapy center directors who had originally helped me to design my project decided not to be involved. During my wait for approval on a new proposal, one of those centers unfortunately closed down. This is because there is such a severe lack of field research, proper funding, and government grants for horse therapy and the centers that offer it. The center could not stay afloat operating as an independent charity, and many families in remote locations were unable to re-enroll in horse therapy elsewhere. This is an example of how difficult it is for horse therapy centers to operate without community, state/provincial, and federal support – which is lacking largely because horse therapy is not widely known about or well-understood (Hallberg, 2008).

Setting Changes

When I did finally receive approval and clearance from IRB for my revised proposal – almost eight months after submitting my original proposal – I no longer had any local horse therapy centers willing to participate. Therefore, in an attempt to protect potential study participants from personal promises – and in an attempt to recruit any participants at all – I was

(at first) forced to solely rely on social media and public horse therapy forums for participants for recruitment. I posted fliers approved by my dissertation chair, but I only received a few successful responses. Fortunately, I became acquainted with CanTRA administrative staff, who generously agreed to send an email explaining the purpose of my study and requesting participation from its members across North America. Therefore, the majority of this study's horse therapy participants and horse therapy administration ecological experts (of which there was a welcomed surplus) came from this contact, and I am forever indebted to the help, encouragement, and trust CanTRA extended to me.

Email Specifics for Data Collection

Due to geographic logistics, my initial plan to interview participants in person or even by phone (due to time zones) became impossible (in terms of uniformity and consistency). I was forced to conduct interviews solely by email to maintain equality and consistency among participants, though participants also seemed to find email the most convenient way for an interview, anyway. I believe email was the most non-invasive, respectful way to conduct interviews because some participants chose to answer the interview questions in very personal ways. I think that was because they were able to answer in the comfort and privacy of their own homes or offices, rather than be confronted by a total stranger (me) and probed to answer personal questions. The information I received was far more telling and beneficial than I expected. Also, not having structured interviews allowed participants to take their time with answering questions – they were not forced to answer everything all in one sitting and this also allotted them time to carefully think about and review their answers before submission. While it is possible that personal circumstances may have influenced their responses, I did not set hard

deadlines for the interviews to be emailed back to me. I hoped that this would allow participants the freedom to answer questions at their own convenience, when they were not influenced by more pressing matters that might have influenced their responses had they been forced to commit to an in-person interview.

For example, a few participants expressed concern for me if they were not able to submit their interviews within a few days, offering personal reasons, such as being a single mom and the sole financial support of three kids or having to travel long distances for a string of serious pediatric care appointments within a few days of when I sent the interview. Because of the flexibility of email, I was able to offer participants all the time they needed, which took the pressure off immediacy and gave them the opportunity to participate at their own convenience. I think these circumstances created the best possible conditions for the collection of honest, relevant (and human – as this study is looking for the truly *human* experience which is *not* purely scientific or objective) data that generally caught participants neither at the best or worst times. It is important to remember that many participants were and/or are still facing physically, emotionally, and/or psychologically trying times. The email format of interviews allowed people the space, convenience, privacy, and freedom to report their true times, as in, their answers and storytelling in the interviews are most likely their accurate experiences and snapshots of their past and daily lives. This and more in-depth issues of trustworthiness will be further explored later in the chapter.

Data Collection and Demographics

Walden University's IRB issued approval for data collection to begin on June 26, 2016, and the last data interview was collected on January 3, 2017. As planned, I was able to recruit

eight parent participants who had children (aged three to 17 years) involved in horse therapy, eight adult participants (aged 18 years and older) who had horse therapy as children, and more than ten ecology experts (I was able to recruit a total of five horse therapy administration experts, two community development experts, one horse therapy and community development expert, one economics expert, one environment and land management expert, one environment expert who also provided a personal summery on horse therapy administration, and one economics and land management expert). Due to the kindness and enthusiasm of many ecology experts, I was able to talk to more than ten experts (12 in total – originally, only ten were planned), though I still made sure to inquire about each category (community development, economics, environment, land management, and horse therapy administration) from at least two different experts. Therefore, no category contains commentary for only one expert, even though some experts were able to contribute to more than one category.

As previously mentioned, the majority of the horse therapy participants involved in this study came from a connection to CanTRA, though sometimes, reaching participants were a result of indirect contact with CanTRA, as CanTRA-affiliated family and friends may have forwarded them the recruitment email, but they potentially had no affiliation with CanTRA, itself. The only criteria for participation was that all participants had a fluency in English, could provide informed consent, and had a specified association or affiliation with horse therapy, depending on what category (parents, adults, or ecology experts) they qualified for. Therefore, there is very little demographic information available to report, nor is it relevant to the study.

It is also important to note that there were a few ecology experts who were recruited through personal contacts (or who heard of my study and asked to participate), due to the fact

that the horse farm I grew up on and still manage exists within a much larger horse community that its existence depends on. There were also a few horse therapy participants who saw my recruitment posts on social media, recognized my name, and because they wanted to help me and my quest, immediately offered to participate. Although this circumstance will be discussed further in the trustworthiness section, I do think it is important to mention here that because my interview questions were not directly personal and the outcome of interviews had no direct personal impact on me, there was no bias in interviews that came from the few participants who knew me. If anything, the participants may have worked harder on their interviews because they knew how hard I fought to make this dissertation happen, and so, they wanted to help fight, too.

29 out of 30 interviews were conducted by email. All participants were emailed full interviews based on the category they qualified for (and sent the appropriate interview questions listed in Chapter 3). One ecology expert brought his typed summary to me in person (which I later scanned into my computer to keep secure with the other interviews) when he could not get it to send via email. Therefore, all interviews were self-recorded by participants. Interviews were kept secure in a password protected email account and locked offices and cabinets when printed out for data analysis.

Unusual Circumstances

The only unusual circumstances which occurred during data collection involved prospective participants who wanted to be involved in the study but either did not fit a pre-set participant category or could not understand the need for a consent form. These prospective participants were parents/guardians of adult children who wanted to share their stories with me, but IRB forbids their contribution without providing a signed consent form, so I was not

permitted to use the information they provided. There were a few prospective participants who signed the consent forms as expected, but chose to opt out of the interview and to provide their own summaries and stories that they felt best represented their experiences. These alternative interviews were wholly accepted, validated, processed, and coded in the same ways the standard interviews were processed and coded.

Data Analysis

Contrary to the stereotypes and expectations of qualitative studies in terms of inaccuracy and a lack of concreteness, the data collected for this study was straightforward and easy to analyze (Bachi, 2012; Creswell, 1998; Ta Vallaei & Abu Talib, 2014). Participants answered questions in common and relatable language, terms, and experiences. Without prompting, they provided detailed examples, thoughts, and feelings in order to illustrate their points. There were no discrepant cases, and in general, all 16 horse therapy participants reported very similar outcomes, in terms of general health and well-being. Likewise, all 12 ecology experts generally agreed on the viability of horse therapy as a public health initiative. Therefore, data was easily hand-coded. The interviews of horse therapy participants were analyzed first.

To begin coding, a list of over 100 key words and phrases related to health and well-being were organized alphabetically. Coding examples (the full list can be found in Appendix A) involved the words and terms directly used by parents of special needs children involved in horse therapy and adults who underwent horse therapy as children to describe their thoughts, feelings, observations, and perceived changes experienced as they relate to horse therapy. The list includes terms like, “accomplish goals,” “adoptive and birth family participation,” “calms the nervous system,” “coordination,” “core strength (creates, develops, improves), “disadvantageous

to a child forced to stop (due to funding, accessibility, or availability)," "diversity (introduces, celebrates)," "eliminates the need for a wheelchair," "eating (increases)," "emotional stability," "endurance," "eye contact (develops and improves)," "family time," "forming relationships with a horse helps learn about forming relationships with humans," "free of disability on a horse," "hand strength (develops and improves)," "happiness," "impulsivity (controls and decreases)," "inclusive activity," "lack of funding limits accessibility," "life motivation," "pain coping," "parental satisfaction," "posture (improves)," "prevents muscle loss," "prevents pneumonia," "prevents systematic affliction/hospitalization," "relaxing/relaxation," "rewarding," "shatters stigma about therapy for patients and peers," "success," "tailored lessons address each child's unique needs and target issues," "understanding environment," "walking (helps and improves)," "whole day is ruined if horse therapy is missed," and "would need a wheelchair if stopped riding."

Next, the ecology expert interviews were coded. Information from these interviews contained insight on both horse therapy as it affects health and well-being for special needs individuals and the logistical and ecological factors horse therapy centers require and impose on the community in order to run successfully. Health and well-being terms used by ecology experts were added to the health and well-being raw coding list (found in Appendix A). A separate logistical and ecological raw coding list for horse therapy centers and horse therapy application was formed (which can be viewed in Appendix B), but a few examples from this list include: "animal husbandry/stewardship," "brings communities together," "certification can be expensive," "communities benefit," "environment benefits," "funding is a challenge," "good for the economy," "manure can be considered pollution or be repurposed," "no negative impacts to

the community," "production of hay and grain provides income for local farmers," "$25-$50 fee per therapy session." Once the raw coding lists were complete, all codes were organized based on two separate but overlapping themes. The first theme involved the framework and explanation of horse therapy (and this study) in terms of categorizing codes based on how they worked to describe the phenomenology, ethnography, and grounded theory of horse therapy and horse therapy centers, as well as the overall experience of horse therapy participants. The second theme of composed codes was used to answer the proposed research questions relating to how horse therapy impacts health, well-being, and ecology.

Results

Pertaining to intrinsic issues of confirmability, some of the results may be difficult to understand and accept plainly, without explanation, interpretation, and additional synthesis, which is characteristic of Chapter Five. Therefore, the raw results will be presented here based on protocol and organized by theme and research question, followed by pertinent quotes. The results will be listed again in Chapter Five, organized again by theme, and they will be supported with explanatory information to better justify and theorize them.

Research Question One: Organized Based on the Phenomenology of the Horse and the Ethnography of Horse Therapy Culture

Research Question One consisted of the following: What are the physical, mental, and emotional experiences (as they relate to horse therapy) of children and their families who are involved in horse therapy? The pertinent results to this question are listed below in Table 1. Italicized words represent coding terms and phrases taken directly from the initial coding list and raw data (see Appendices A and B). Phrases in quotation marks signify direct quotes from

participants. For the reader's ease in understanding the results below, please note that direct references or statements made about horses, themselves, and any resulting experiences or emotions that stem from them involve the phenomenology of horses, themselves, and their ability to connect with and adapt to each horse therapy participant, which will be discussed in detail in Chapter Five. Similarly, references about the horse therapy environment – which include information about volunteers, fellow families and riders, and the general atmosphere horse therapy centers offer – involved the ethnography of horses and horse therapy. These two themes will be used to further interpret the results in Chapter Five.

Table 1
Summarized Results on the Experience of Horse Therapy for Special Needs Children

1R1. *The motion* and *presence of the horse is physically therapeutic and healing, and horses promote physical exercise and activity.*
"I laugh at the tests as the doctors keep shaking their heads as I am not losing muscle and have seen a small increase in strength over the last 3 years. We think it's due to my physical activities including the riding." – Reata, Former Child Horse Therapy Participant
"Horse therapy has impacted my life in that I was never supposed to be able to walk due to my spina bifida, but because the horse's movements mimic [human muscles] for walking, [I was able to get strong enough] to walk." – Luna, Former Child Horse Therapy Participant
"I never knew that horses could be so caring and aware. Bunny could tell that Grace was causing me so much stress so she chased her away and didn't let any other horses come by me. I don't know how she could detect that I was feeling so stressed…my therapist said I should try to be aware of how stressed I am feeling. I don't always notice how upset and stressed I really am because I tend to push it down. What happened that evening really got me thinking. Horses really can aid in the process of healing people." – Cora, Former Child Horse Therapy Participant
"An hour spent with a horse certainly beats an hour with a normal OT session!" – Parent of Luca
1R2. Therapy horses are *healing, calming, gentle, and patient. Horses provide hope, friendship, unconditional love, unconditional acceptance, happiness, freedom from disability, and independence.*
"Horse therapy helps with core strength, coordination, and confidence, and the bond that develops between the rider and the horse is a bond like no other. Horses can be so patient and almost understanding of their rider which in turn, can help the rider become calm and comfortable." – Fawn, Former Child Horse Therapy Participant.
"I have seen smiling faces of children who can't walk, yet on a horse, they can run." – Parent of Daisy

(table continues)

1R3. Working with therapy horses is *fun, joyful, exciting, stimulating, rewarding,* and *challenging.*

"She loves her riding lessons. The smile on her face every time she steps on Sam is priceless!" – Parent of Anne

"My experience is that every moment of hardship is worth any progression gained." – Parent of Roger

"Based on my experience, anyone who is interested in horse therapy doesn't have anything to lose! If anything, it's a fun and engaging activity that most people would enjoy." – Fawn, Former Child Horse Therapy Participant

"Even though I was a little sore after some sessions, being with the horses was worth the little discomfort and it is part of riding a horse." – Holly, Former Child Horse Therapy Participant

1R4. Therapy horses *adapt and interact with each child in a special and unique way*, forming a special *bond* with children that make them feel special and loved just as they are.

"[Horse therapy] allows [children] to build a relationship with a horse and that is an incredible experience! By interacting with the people and horses it can [also] help the parents see past the disability of their child and focus on the fun that their child is having." – Parent of Johnna

"A favorite part of the evening for my daughter is to take apples or carrots back to the stables to give 'her' horse after the lesson. She has gone from being very afraid to being so curious and loving towards the horses. She insists on giving each of them a kiss before we leave." – Parent of Jackie

1R5. Therapy horses offer *"unique metaphors for life's challenges which allows for introspection;"* it is easier to *"open up"* with therapy horses. Therapy horses show and *reflect an individual's thoughts, feelings, and behavior, which allows self-impact (in terms of awareness, behavior, control, etc.)* to be analyzed and understood.

"I was involved in equine assisted psychotherapy, for a period of 8 months. I really enjoyed horse therapy, partly because I already had an immense love of horses. It seemed that it was much easier to 'open up' to a therapist in an active outdoor setting versus the traditional counselor's office. The horses offered unique metaphors for life's challenges, that allowed for greater introspection." – Senora, Former Child Horse Therapy Participant

"Horses have a gift of opening people's eyes." – Cora, Former Child Horse Therapy Participant

"Without any bias that human therapists may subconsciously have, horses are honest." -Blacksmith

(table continues)

1R6. Working with therapy horses elicits *compassion and concern* for the horse from the individual.

"The horse has a soothing affect on her, calming her and reduces impatience and impulsivity while with him. Increased compassion [has also been observed] with the horse…she doesn't want to spook the horse." – Parent of Daisy

"I think the most important thing a child learns while in the arena is how to be more aware of themselves and the impact they have on the environment as a whole." – Parent of Roger

1R7. Therapy horses are mentally smart and emotionally capable, which provides *mental/emotional healing* and stimulation. Furthermore, the mental/emotional connection therapy horses make available to humans directly fosters *impacts on physical health and well-being.*

"My experience with [Sporty] has shown me that I am persistent and [an] empathetic person. My therapist and the equine specialist have told me that most of their clients barely give Sporty a chance to show her true self. They see her crabby side and want to stay away. This has shown me that I give others second chances and that I work to see the other side of them. I've also seen my empathy for her pain [and it] has helped me grow the relationship between her and I. She has helped me learn a lot about myself." – Cora, Former Child Horse Therapy Participant.

"There have been several periods in my life where access to horses and riding was extremely limited, and it was very easy to become depressed during those times." – Senora, Former Child Horse Therapy Participant

1R8. Horse therapy center *staff and volunteers are warm, welcoming, inviting, understanding, and accepting.*

"Therapy riding was highly recommended and placed Daisy in a non-judgmental environment where her peers were understanding and had visible disabilities of their own, and all the staff were there to support her." – Parent of Daisy

"I watch our volunteers with great admiration. They arrive weekly, with such positive attitudes and kind, gentle supportive ways. We parents are so grateful for them." – Parent of Jackie

(table continues)

1R9. Horse therapy staff and volunteers are *trained and qualified* to work with both special needs individuals and therapy horses. More horse therapy centers are primarily composed of volunteers, which means they choose to work in this field, they want to help, and they thoroughly *enjoy their work.* Horse therapy volunteers provide a form of *external social support, trust, and socialization* that many

individuals have only experienced within their immediate network of family and caregivers.

"As a parent of a child who participated in the mental health aspect of therapeutic riding, [as an] instructor in training, and [as] barn staff…I saw children come in reluctant to the targeted areas soften – I saw how different horses would react to the students they interacted with – as a parent, I saw my son gain control of his feelings, learn to manage them and realize that he had the tools to cope in every day situations to the point where he told he wanted to give up his spot in the program to someone who needed it more than him. [He said to me], 'I have the tools, Mom, I just need to remember to use them.'" – Parent of Roger

"Our horse therapy team as well as the volunteers are great people, very welcoming and non-judgmental. They always see the positive side of things, are very patient and encouraging. They love what they do." – Parent of Tatiana

"I love seeing the progress [of participants]. And I realized I really enjoy making a difference in people's lives. So now I am hoping one day to quit my corporate job and work at one of these centers." – Horse Therapy Volunteer/Ecology Expert

IR10. *Staff and volunteers are trained* to harness the phenomenology of horse *to shape tailored, customized sessions for individuals and offer general instruction on working with, caring for, and riding therapy horses.*

"…I don't think there are any disadvantages for special needs children. It's a way to socialize with their peers in a setting that is specially designed to suit their unique needs." – Parent of Anne.

"Veruka feels happy to participate in horse therapy, she feels that her disability does not impact her participation in an activity, she doesn't have to worry about not seeing the ball, not seeing a net, or not being able to see because of the sun, etc. It's an inclusive activity and [volunteers] encourage her to be independent, complete tasks on her own, and don't prevent her from trying tasks despite her vision loss." Parent of Veruka.

(table continues)

1R11. With trained staff and volunteers working with their children, parents/family member/caregivers can *"sit back," relax, be happy, and enjoy watching their children thrive and excel with horses without worrying about safety or supervision.*

"As a parent with a child in horse therapy, we get a real joy in watching our child participate in something that they truly love. We can see Johnna's excitement level rise when we say it's Thursday and it's Bree Day (Johnna's horse). Johnna has become so comfortable with being around horses, she has gained so much confidence out of riding, this truly makes us so happy." – Parent of Johnna

"For the first time, I am actually able to sit back and watch her do something on her own and now that the instructors and staff are trained to help her." – Parent of Daisy

1R12. Learning about horses from horse therapy staff and volunteers provides individuals with *life skills that can translate into a lifelong passion, sport, hobby, or career (in horses and/or horse therapy).*

"Horses help people in unimaginable ways and are beneficial to everyone. Horses can help people with a range of problems, from small to big. I would recommend horse therapy to anyone who needs direction or help in life. Being involved in horse therapy has caused me to want to have a career in it so I can help people like I have been helped." –Cora, Former Child Horse Therapy Participant

"As my skills improved, I started to compete in competitions, and taking a more active part in working with my coach to train horses." – Ruth, Former Child Horse Therapy Participant

(table continues)

1R13. The horse therapy center/horse farm environment provides a unique atmosphere *for internal networking and socialization.*

"Until Jackie started, she didn't really have any friends. She has met one other young girl at riding that she seems particularly fond of. Jackie will walk right over to her and take her hand and they walk out to the arena together. Very heartwarming. She also shows us pictures of her friend on her ipad. It's such a nice change. Watching our daughter ride, sitting with parents of other riders, has given us the opportunity to network and make new friends. Some have similar challenges, and we can offer advice. It's also a time when we support each other. We give encouragement to each others' kids…It's a time we can share opinions about things outside the arena, too, like school and doctors and available resources and new ideas." – Parent of Jackie

"As a family, we know Thursday evening will be enjoyable as we get to see Johnna in her element. It also gives us a chance to speak with other parents while the lesson is on. Families at horse therapy are a close knit group, we share stories, we help each other with problems, and we share information on services that each other may benefit from." – Parent of Johnna

"As a parent of a child involved in horse therapy, we feel happy that she has found an activity that allows her to feel included, she looks forward to this activity on a weekly basis and feels success in her programs." – Parent of Veruka

"Also, this activity has created bonds and friends with the staff, volunteers, and other riders. We even have a group on Facebook through [our horse therapy center] that we can see and talk on." – Reata, Former Child Horse Therapy Participant

1R14. The horse therapy center/horse farm environment provides a unique atmosphere for *public/external networking and socialization.*

"It has also been great for her to use horseback riding, and pictures of her doing it, in projects at school. So nice for her peers to see her doing something that they'd love to do, too!" – Parent of Jackie

"I loved leaving my wheelchair behind and I loved showing people what I could do and how impressed they were with my ability to ride, despite my disabilities." – Holly, Former Child Horse Therapy Participant.

"[Horse therapy] gives me something to talk about with other people. Having a disability sometimes does not give you a lot of things to talk about." – Reata, Former Child Horse Therapy Participant

"Her horse, Toby, has become a friend and she chats about him to her friends, family, and teachers all the time." – Parent of Daisy

(table continues)

1R15. Horse farms/therapy centers are the only place where horse therapy can exist, but *disadvantages include cost, weather, and accessibility.*

"The only disadvantages are the cost (out of some parents' reach – I know it will be a challenge for us to pay for it when the CAS isn't involved and she is fully our responsibility in the future) and the fact that it isn't offered in winter….For my own daughter with ASD, schedules and routines are very important to her. Her lack of communication makes it difficult to explain to her that it's just too cold for the horses and the volunteers." – Parent of Jackie

"My only concern would be if the parents cannot afford to continue (there are many costs associated with having children with disabilities that add up quickly) – the impact that would have on the child [concerns me]" – Parent of Veruka

"If I had to miss one [session] due to a horse being sick, weather, or if I got sick, it affected my entire week. One of the few things I found frustrating was when the barn didn't have a horse that was able to meet my skill level. I needed a horse that I could work with at a higher level in order to progress." – Ruth, Former Child Horse Therapy Participant

Research Questions Two and Three – with Results Organized by Grounded Theory

Before listing the results to Research Questions Two and Three, it is important for the reader to have access to a list of the physical, emotional, mental, and life conditions and challenges that were reported by participants (some participants reported in great detail, some did not – out of respect, participants were not probed beyond their initial willingness to share). The conditions and challenges listed below are what inspired their enrollment in horse therapy, which primarily involved therapeutic riding and various forms of official and unofficial equine assisted psychotherapy (in the form of grooming, tacking, helping with chores, and volunteering in other lessons). Zero participants originated from official hippotherapy programs, but many referenced "the motion of the horse," as well as the walking, balance, and strength offered by the shear physiology of the horse as a conjurement for specialized healing and in the provision of critical physical therapy, without which they would be back in wheelchairs. Although these participants did not experience official hippotherapy exercises and engagements by way of hippotherapy-certified centers and instructors, they did experience unofficial hippotherapy exercises and engagements in their horse therapy sessions, based on pure definition.

Physical, Emotional, Mental, and Life Conditions and Challenges Reported by Participants

ADHD/c with ODD (ome participant): ADHD/c is a behavioral disorder, which stands for "attention deficit hyperactivity disorder of combined presentation." Individuals with ADHD/c ODD (oppositional defiant disorder) struggle with inattention, impulsivity, anger, violence, and disruptive behavior; there are approximately three million cases diagnosed in USA per year (NIMH, 2017).

Albinism, OCA1 with legal blindness (one participant): Albinism is very rare and can be characterized by a lack of melanin production; less than 20,000 cases are observed in the US each year (Kivi & Solan, 2017). OCA1 refers to oculocutaneous albinism and affects pigment production in the eyes, skin, and hair (Kivi & Solan, 2017).

Alcohol abuse (underage; one participant): Alcohol abuse kills more than 4,300 minors in the US per year. Thirty-five percent of high school teenagers drink alcohol (Addiction Center, 2017).

Anger issues/trouble at school (three participants): Many children lash out in anger or frustration due to stress, anxiety, neurological disorders, or hormones associated with the onset of puberty. This particular case was parent-identified and not considered serious, but the parent wanted to seek positive intervention, and therefore, chose horse therapy.

Anxiety disorder (one participant): Anxiety disorder affects more than three million people in the US each year (NIH, 2017). It is considered a mental health disorder and involves feelings of worry, stress, anxiety, fear, overwhelm, and inadequacy that can be strong enough to substantially interfere with an individual's daily activities (NIH, 2017).

Asperger's syndrome (one participant): A developmental/neurobiological disorder that is often classified as a high-functioning form of autism (Autism Speaks, 2017a). Affected

individuals have extreme difficulty socializing, specifically in terms of interaction and nonverbal communication, and there are fewer than 200,000 cases diagnosed per year (Autism Speaks, 2017a).

Autism/autism spectrum disorder (two participants): Autism is common, as there are more than 200,000 new cases per year and over 3,000,000 documented cases in the United States alone (Autism Speaks, 2017b). The condition affects the nervous system and comes with a range of symptoms, but the most common symptoms include challenges with communication, challenges with social interaction, and obsessive-compulsive behavior (Autism Speaks, 2017b).

Brain damage (one participant): An injury that translates into the destruction or deterioration of brain cells, which can lead to extreme physical, mental, and emotional impairments, and even death, depending on the severity and type of injury (Brain Injury Association of America, 2017). Approximately three million people in the US sustain a brain injury every year (Brain Injury Association of America, 2017).

Cerebral palsy (two participants): A congenital disorder that affects muscle coordination, body movement, muscle tone, and posture. Chronic muscle weakness is a common symptom and many individuals require assistance to get around (Mayo Clinic, 2017). There are more than 200,000 new cases diagnosed in the US each year (Mayo Clinic, 2017).

Congenital myotonic dystrophy with weak legs and club feet (one participant): A congenital, inherited muscle disorder that can be progressive and aggressive (characterized as muscle wasting and weakness) if equally aggressive physical therapy is not undertaken (MDA, 2017). Symptoms include weak muscle tone, club feet, breathing problems, slow development,

and certain intellectual challenges (MDA, 2017). One in 8,000 people worldwide are affected (MDA, 2017).

Deafness, bi-lateral (one participant): This condition means that both ears have lost their ability to hear or detect sound (Deaf Websites, 2013). About two or three of every 1,000 children born in the US have some type of hearing impairment in one or both ears (Deaf Websites, 2013).

Depression (one participant): A mood disorder associated with profound sadness and loss of interest. It can cause both physical and emotional conditions when left untreated and often affects or dictates the way individuals behave within and manage their day-to-day lives (NIMH, 2016). Approximately 20% of teenagers experience depression before they reach adulthood (NIMH, 2016).

Difficult relationship with mother, hurtful aunt, and birth family: Three different participants all reported difficult family relationships as a source of pain or trauma that contributed to their involvement in horse therapy. In the case of the birth family, it was noted that horse therapy created a safe, open environment where the birth family could come watch and support as the child engaged in a unique, enriching activity where the child excelled, which provided the child with meaningful relationship building and bonding time, as the adoptive family was also present during the sessions.

Drug abuse (underage; one participant): Teenagers with drug addictions have a greater risk of developing a serious addiction when they are adults. 21% of high school students use marijuana (HHS, 2017).

General anxiety (two participants): Although usually less severe than a chronic anxiety disorder, general anxiety (worry, stress, fear, overwhelm) can fluctuate from mild to debilitating within the same individual, and this can cause a range of other symptoms if left untreated, like social disengagement, depression, or chronic and more specific types of anxiety disorders (ADAA, 2016). General anxiety affects almost seven million people in the US or three percent of the population (ADAA, 2016).

Failing high school advanced placement courses*:* One participant with incredible aptitude and a good grade- and middle-school record suddenly had trouble focusing and engaging in high school advanced placement courses, even though the participant had specifically tested into them.

Global development delays (one participant): A general term used to classify an individual between birth and the age of 18 who has been diagnosed with having a lower or slower intellectual functioning than what is perceived as "normal" among the general population. One percent to three percent of the world's children are affected by global developmental delays (Special Education Needs, 2016).

Glossopharyngeal neuralgia (one participant): A very rare disorder classified as an extremely painful irritation of the ninth cranial nerve that affects the throat, tongue, and ears (Mayfield Brain and Spine, 2017). Pain is usually described as a painful electric shock that can be triggered by swallowing (Mayfield Brain and Spine, 2017).

Hypotania (two participants): A condition caused by a combination of diseases and/or disorders that cause decreased muscle tone, though this condition is most often experienced in individuals who suffer from inherited neurological condition.

Learning disability affecting phonological decoding and working memory (one participant): An individual with a phonological decoding learning disability has trouble connecting sounds to symbols (Brady, 1991). A learning disability that affects working memory causes an individual to struggle to retain words or pieces of information long enough for a full thought or concept to be developed (Brady, 1991).

Mobility issues: This description (as offered by the participant) may include problems, unsteadiness, or balance challenges involved with walking, getting in and out of chairs and beds, muscle weakness, joint pain or problems, and neurological misfiring that may cause problems with coordination.

Non-verbal (two participants): A condition defined as communication without words, which an individual may suffer from due to a number of physical (such as deafness), mental/emotional (such as post traumatic stress disorder) and neurological problems (like autism;Autism Speaks, 2017b).

Nystagmus (one participant): A fairly common condition affecting one in several thousand people that involves involuntary eye movement and can eventually result in vision impairment (American Optometric Association, 2017). It can be caused congenital, idiopathic, or certain types of neurological disorders (American Optometric Association, 2017).

Poor life choices: One participant reported “poor life choices” during high school as one reason for being referred to an out-of-state treatment center where horse therapy was offered.

Prader-Willi syndrome (one participant): A very rare genetic disorder (there are less than 20,000 new cases per year) that is associated with obesity, intellectual delay and disability, and

stunted growth (specifically, shortness is height; Mayo Clinic, 2017). This particular case was also associated with a lack of severe muscle tone.

Scoliosis (one participant): A lateral curvature in the spine caused by congenital abnormalities, neuromuscular conditions like cerebral palsy and spina bifida, degenerative bone diseases or trauma, or unknown forms of heredity (Mayo Clinic, 2017c). Two to three percent of Americans under the age of 16 have scoliosis (Mayo Clinic, 2017c). The condition affects posture, walking, daily activity, sleeping, and general quality of life if left untreated. *It is important to point out that the participant who reported scoliosis described it as "mild."

Spasticity (two participants): This condition can be described as a brain injury caused by stroke or a spinal cord injury caused by trauma where signals between the nervous system and the muscular system become unbalanced (American Stroke Society, 2013). Spasticity can severely interfere with daily activities and prevent proper growth in children, and if left untreated, muscles can permanently freeze in abnormal and painful positions making waking, movement, and speech extremely difficult (American Stroke Society, 2013). Approximately 12 million people worldwide suffer from spasticity (American Stroke Society, 2013).

Spastic diplegia (Little's disease; one participant): A form of chronic cerebral palsy that includes spasticity and hypertonia (not to be confused with hypotania, as listed above), where individuals experience constant stiffness and/or tightness, especially in the lower extremities (Cerebral Palsy Guidance, 2017).

Spina Bifida (one participant): A birth defect that causes a developing baby's spinal cord to develop improperly (Mayo Clinic, 2017d). It is a rare condition, affecting less than 200,000 babies per year (Mayo Clinic, 2017d).

Stressed with a Change in Routine: One participant described his daughter as becoming stressed with changes in her routine, and therefore, this became one reason horse therapy was sought after for her.

Struggled with Emotional Regulation: One participant described her son as struggling with emotional regulation at home and at school, and so, she enrolled him in horse therapy to help him work on those issues.

Suicidal (one participant): One teen in the US takes his or her life every 100 minutes, and suicide is the third leading cause of death for young people ages 15 to 24 (APA, 2017).

Additional Health Notes

During data collection – in interviews with parents of special needs children, ecology experts, and just general "horse" people – I was constantly (and politely) corrected and reminded that although my study was focusing on horse therapy for special needs kids, horse therapy is just as beneficial to special needs adults, along with everyone else who may not be "clinically" special needs, but struggles with a hardship – large or small – in their lives (which we all do). Therefore, many of the above descriptions include statistics inclusive of adults. Readers may extrapolate for themselves how adults in similar situations or with similar conditions may also be helped by horse therapy, based on the results below.

Results on Health and Well-Being

Research Questions Two and Three consisted of the following: What are the health and wellness effects special needs children experience as a result of their horse therapy session(s), do

special needs children/families associate horse therapy with changes in health and well-being, and if so, what specific factors are positively and/or negatively associated with health and well-being for special needs children who undergo horse therapy? The results to these questions are collectively listed below in Table 2. All terms were taken directly from the raw data, so quotes are not necessary and would require more space than what it allotted here. The results compiled here have been organized based on the grounded theory, as defined by the phenomenology of the horse and the ethnography of the horse/horse therapy environment. Each participant reported improvements in health, well-being, or both, as a result of horse therapy, which translates into a 100% success rate (for this particular study). Because this is not a case study (and because every individual, therapy horse, and horse therapy staff and their centers are different), specific results by case will not be listed.

However, many of the same health and well-being impacts of horse therapy were reported by participants who engaged in horse therapy for completely different reasons. Although this will be discussed in greater detail in Chapter Five, it is important to note that well-being does have a direct impact on quality of life, and therefore, health. Although horse therapy may never fully cure children with chronic forms of cerebral palsy or permanent brain injuries that confines them to wheelchairs, the happy, exciting, independent sensation of knowing and feeling what it is like to walk independently and with freedom on the back of a horse is an unparalleled experience that no other form of therapy can offer. Results were organized based on this principle (that health and well-being overlap), and so there are some repetitive terms listed under both health and well-being, since.

Impacts to Physical Health, Well-Being, and Quality of Life

In Table 2, the reported impacts of health and well-being as reported by participants are provided. It is important to note that the health and well-being terms listed are the terms used by the participants themselves.

Table 2

Impacts to Physical Health, Well-Being, and Quality of Life, as Reported by Horse Therapy Participants

Impacts to Physical Health	Impacts to Well-Being and Quality of Life
Horse therapy maintains and improves: balance, behavior, coordination, coping skills, core strength, eating, emotional reserves, emotional stability, endurance, eye contact, family interaction and relationships, fine motor skills, general motor skills, good moods, hand strength, independence, leg strength, pain coping and relief, physical function, posture, relaxation, resiliency, self-care, self-awareness, self-control, smiling, speech, talking, and walking.	Horse therapy creates: positive attention focused on the child, a positive challenge, and is a way to impress peers (knowing how to ride or work with a horse is a unique skill for anyone).
Horse therapy prevents: muscle loss, loss of coordination, needing a wheelchair, pneumonia, and systematic affliction/hospitalization.	Horse therapy provides: a sense of accomplishment, a sense of achievement, a sense of rising to a challenge, a way to excel at a sport, an inclusive activity, a sense of normalcy, a sense of ownership (children feel like their therapy horse is their own and belongs to them), mindfulness, a sense of progress, a sense of responsibility, an overall better quality of life, new opportunities, sense of belonging, a special activity that makes siblings jealous (considered a positive attribute), mental wellness, an understanding of personal feelings and behavior, and a sense of success.

(table continues)

Impacts to Physical Health	Impacts to Well-Being and Quality of Life
Horse therapy reduces: aggression, anxiety, the amount of time spent in a wheelchair, the need for	Horse therapy maintains and improves: calmness, a desire to participate, desire to socialize, good

a wheelchair, impulsivity quirks that affect school performance, reluctance to participate, scoliosis curvature, and stress.	moods, the ability to manage moods and feelings, organization, outgoingness, positive mental health, patience, patience with annoying sensations, peer acceptance at school, and work ethic.
Horse therapy provides: ADHD sensory input, calming for the nervous system, full body workout (that cannot be accomplished from a wheelchair), an engaging exercise activity, freedom, friendship (with horses, other participants, other families, staff, and volunteers), hope, physical stimulation, something to look forward to, and overall physical wellness.	Horse therapy helps children: accomplish goals and overcome fears.
Horse therapy: is ambulatory, is a low impact sport, makes a physical difference, and shatters stigma on special needs therapy.	Horse therapy fosters: physical and mental activity, adoptive and birth family participation, bonding with others (beginning with horses, horse therapy center staff, volunteers, and other riders and participants), community socialization and networking, compassion, conversation among peers found outside of a horse therapy setting (horses and riding provide unique skills and experience, which give children something to offer in conversation and discuss), diversity, family activity, family bonding, family interaction, family support, family time, independence, interactions with animals, involvement around the barn (in terms of helping with chores and horse care), social connections, social skills, socialization (both internally, at the horse therapy center, and externally, at home and school), and social support.

(table continues)

Impacts to Physical Health	Impacts to Well-Being and Quality of Life
	Horse therapy builds: confidence is self and ability, confidence in animals and horses, confidence with others, confidence in working with others, life motivation, and selflessness.
	Horse therapy provides opportunity: to belong somewhere, to compete with horses (in Special Olympics or mainstream competitions), to have a future career among horses and/or horse therapy, to train horses, to volunteer, to be part of a welcoming (non-judgmental, understanding, patient, encouraging) environment, to find an enriching future hobby, to learn life lessons and skills (learning how to swim or ride a bike is akin to learning how to ride a horse), to be a part of something greater than self, to learn about yourself, to be free of social demands, and to work hard.
	Horse therapy is: calming fun, enjoyable, exciting, joyful, non-judgmental, and rewarding.

Additional Results on Health and Well-Being

Horse therapy instructors (who were interviewed as ecological experts) also mentioned teaching students with: Down Syndrome (the child was also non-verbal), a five year-old non-verbal, PTSD foster child (who, remained in foster care until the age of 18, but by 22 years old, was able to ride and take care of horses independently), and a young child with cerebral palsy that doctors said would be in a wheelchair by ten, but because of horse therapy, remains mobile and independent (and without a wheelchair) at 13 years old, military veterans, inner city children at risk for gang activity, and abused children. All of these individuals greatly benefited from

horse therapy physically, mentally, and emotionally. The few disadvantages and complaints reported by horse therapy participants were strictly limited to circumstances of access, weather, or frustration with wanting to excel further when more experienced horses and diverse, specialized instructors were lacking.

There were no health disadvantages reported except for disappointment when horse therapy sessions were cancelled, though allergies and the inherent safety risk in riding or being around horses (or any animal) were reported as potential health concerns. However, none of the horse therapy participants experienced any of these concerns first-hand. Well-being disadvantages were associated with disappointment, sadness, and longing when horse therapy had to be stopped for various reasons.

Research Question Four: Results Compiled and Organized Using the Grounded Theory

Research Question Four was formulated to address the second part of my inquiry on the ways in which horse therapy centers impact local communities. The question asked, "What are the ecological requirements, implications, and public health potential of horse therapy centers, specifically in terms of environment, economics, land management, community development, and horse therapy administration?" This question was solely answered from data that came from interviews completed by 12 ecology experts across North America. The results were organized based on a macro-grounded theory theme, factoring in the phenomenology of horses, the ethnography of horse and horse therapy culture and environment, and the way in which grounded theory can be used to explain how and why horse therapy is so effective for special needs children and their families, based on its phenomenology and ethnography. All of these individual components compile to form a macro-grounded theory, which not only organize, but

also explain, the following results (these relationships will be further discussed in Chapter Five). A simple results list is provided below, since ecology experts provided fairly straightforward interviews. Terms and phrases that are italicized came directly from the raw data and subsequent coding. Quotation marks signify direct quotes from horse therapy experts. Supplementary information to these results are provided in Chapter Five, along with a basic blueprint summary describing start-up and maintenance costs for horse therapy centers, which was synthesized from the interviews.

Community Development

1. Communities benefit from the *enrichment, organic/natural,* and *cultural aspects that the presence* of horse farms/horse therapy centers and horses provide.

2. Communities with horse therapy affiliations become *"stronger one community member at a time."*

3. Communities that support horse therapy farms/center become *better developed* because special needs individuals and their families have a haven to *receive help, support, acceptance, purpose, and socialization.*

4. Given the health and well-being benefits experienced by everyone who participates in horse therapy, communities provide *"a better quality of life to all its citizens"* by supporting horse therapy centers.

5. Therapy horses are given *a purpose* and provided with excellent *care*; horse therapy centers are a good example of *proper animal husbandry, stewardship, and welfare.*

Economics

1. Horse therapy centers *create a demand for local resources and products from local businesses.*

2. Horse therapy *creates a demand for local services* from specialized professionals, veterinarians, craftsmen, entry-level workers, and volunteers.

3. Because many horse therapy centers are non-profit, they "*may not generate taxes for a municipality that a for-profit center occupying the space would generate.*

4. Horse therapy provides full-time *jobs.*

Environment

1. Farms or centers with horses *"may emit light odors from manure and hay/straw storage"* within a quarter-mile radius.

2. Land designated for horse-use and turnout protects and enhances *local ecosystems* and coincides with land-preservation initiatives.

3. There can be "*pollution from excessive transportation.*"

4. Horse manure and other farm waste products can cause pollution if they are not *properly managed* (this does not necessarily cost money to do and many areas offer free removal if on-site processing is not an option). However, horse manure is often re-purposed as *fertilizer* and *compost*, so it may only be considered a *pollutant* in certain areas, whereas, in others, it is considered a *positive by-product*.

Land Management

1. The provision of space for horse farms/horse therapy centers are a *good use of land* because they *keep concrete and urban development away* and *"prevent cities from overtaking nature."*

2. Land designated for horse farm/horse therapy use ensures that local citizens always have *"a place to go" and experience nature.*

3. Land allotted as horse therapy farms/centers keeps the tradition of animal husbandry and farming alive, especially in urban communities where it has become a *lost art*.

Horse Therapy Administration

1. Most counties require horse owners to have at least "*One to five acres of open land per horse" being kept.*

2. "To keep 15-20 horses comfortably, 25 to 50 acres of property are needed, which can be bought from $500,000 to $1,000,000+ all set up (depending on location)."

Modifications to the facilities may need to be made to accommodate special needs individuals.

3. Therapy horses, if not donated or provided free for lease, can *"average $2,500 to $5,000 per horse."*

4. If not donated, bought used, or provided in the farm sale, new start-up equipment can cost approximately $30,000.

5. There are horse maintenance costs, farm maintenance costs, horse therapy administration costs to consider

6. There are *specific staff/volunteer requirements* to offer certified horse therapy.

7. Some centers have as many "as 20 paid staff and over 200 volunteers to run a full-time horse therapy program with 100+ riders/participants."

8. *Besides charity tax breaks and small grants, there are not always federal, state, or provincial initiatives.*

9. Transportation for special needs individuals and volunteers can both be challenges.

10. Communities do not necessarily have to start centers from scratch. Many can partner with and modify local horse farms with existing facilities in the private sector to create horse therapy centers.

11. Benefits to volunteers: *exercise, time spent outdoors, time spent with animals, socialization, a way to give back, gives retirees and the elderly a new purpose, and it is rewarding.*

12. The price for a horse therapy session varied from *$25 to $50 per session,* depending on the center. This fee was sometimes covered or partly-covered by sponsors, insurance, and local pay-help programs, but many parents, adult participants, and ecology experts all remained concerned about the cost.

Evidence of Trustworthiness

In any qualitative study, it is important to ensure and justify the soundness of the resulting data gathered from participants (Creswell, 1998). For this study, the soundness of the data refers to the truthfulness of the experience each participant recounted. Because a goal of this study was to document the experiences and expertise of individuals involved with horses and horse therapy geared towards special needs children, and the specific focus is on health and well-being, experiences are only truth *if* they were recounted with true emotions, feelings, facts, opinions, and general bias that make up each unique experience (Ta Vallaei & Abu Talib, 2014). This lack of objectivity – from the perspective of each participant – is also imperative because this is a new field of public health study focused on a non-traditional public health initiative. Although quantitative public health studies are crucial for the precise measurements of the

effects of medications, therapies, and clinical programming that directly and measurably affect health and well-being, public health professionals know that a public's decision and commitment to access and follow-through with public health services are rarely, if ever, purely dictated by quantifiable factors. Rather, the general public's health beliefs, attitudes, feelings, and emotions are some of the most subjective, non-quantifiable entities that ultimately determine their behavior and the health of their highly quantifiable human physiology. This does not mean that these abstract entities are impossible to gauge or understand, but it does mean that more than just science is needed to theorize, analyze, and synthesize them (Ta Vallaei & Abu Talib, 2014).

Horse therapy runs parallel to public health, in this way. Horse therapy involves many entities that are non-quantifiable, yet still extremely influential, upon health. These entities include the mystical being of the horse, itself, and the horse-human bond, both of which have pivotal roles in horse therapy. I attempted to look at how these entities affected both the health *and* well-being of special needs children, the latter of which is a subjective, non-quantifiable term that is different for everyone, even under the same circumstances. For example, a person may perpetually experience constricted mobility for a lifetime with no hope for a cure, and this may contribute to a person's poor health and poor well-being. However if that person enjoys people and activities that make him or her happy, feel loved, and provide him or her a sense of purpose and worth, that person may report a high-quality of life and excellent well-being (despite poor health), which ultimately contributes to overall health, in general. If this was not the case, mental and emotional health would have no bearing on physical health, and vice versa.

Because of this abstract, yet very real phenomenon, this study does not include concrete definitions or parameters for health and well-being or one's influence on the other since it is

different for every participant, just like it will be different for every reader. Therefore, the purpose of data collection *was* to capture the true and subjective human experience, opinions, observations, and thoughts on horse therapy, as it relates to health, well-being, and ecology of local communities. According to Creswell (1998), there is always trustworthiness in experience, and since 100% of the data collected consisted of self-reports on experience (which contained a balance of both concrete measures of health and well-being, as well as thoughts, feelings, and emotions), this data is trustworthy in its rawest form.

Credibility

Because participants had the convenience, privacy, security, and freedom of time as a result of emailed interviews (as opposed to scheduled, potentially nerve-racking interviews involving personal questions with a complete stranger), this created a safeguard against bias and offers assurance that participants had the greatest chance of offering credible data. While there were a few participants who knew me before the study took place, I made sure all participants knew that I was interested in their honest answers and that both positive and negative comments were equally acceptable. For the people that knew me beforehand, I would only suspect that perhaps they worked a little harder on the interviews in comparison to the others, because they knew how much the study meant to me, but their answers should not be more or less truthful than others, since I asked for their honest opinion and made it clear that there were no wrong or unfavorable answers.

To avoid additional bias, I made sure that each participant knew that their interviews were completely confidential. Even with the help of organizations like CanTRA for recruitment, participants were not under any pressure by me or the organization to act in a certain way.

Furthermore, participants were aware that a purpose of this study was to help improve horse therapy; direct questions were asked about both the advantages and disadvantages of it, in order to encourage participants to be completely honest and comprehensive in their answers. In other words, the purpose of asking direct questions about the disadvantages of horse therapy was to help participants avoid feeling like they could or should only report positive experiences and factors.

It is possible that the reason participants reported such an overwhelming approval for and positive experience with horse therapy is because only those who truly believed in the therapy would want to participate in the study (for example, individuals who quit after one session because of a bad experience would likely no longer stay affiliated with horse therapy organizations, and therefore, would have never seen my recruitment posts). However, that does not mean the self-reports of high success and satisfaction from my participants are any less truthful, it is just possible that I was not able to obtain a truly representative sample of horse therapy participants.

Transferability

Because my study participants live across North America, I believe transferability (at least in terms of geography) is verified. Although the sampling method technically involved both purposeful and random sampling, the organization that helped facilitate the purposeful sampling has constituents across North American that come from a wide range of backgrounds and are affiliated with horse therapy for a variety of different reasons. These varied backgrounds (in terms of region and reasons for involvement in horse therapy) were reflected in the participant sample for this study, even if it is considered a small one, by some standards

(Creswell, 1998). In other words, participants from very different places with very different circumstances (in terms of heath and well-being) all reported similar experiences with horses therapy, and this suggests transferability (Creswell, 1998).

Furthermore, the ecology experts came from a wide range of fields, regions, and experiences, yet there was a general consensus on the overall viability of horse therapy as a public health initiative, even with many ecology experts having experience with horse therapy centers in two separate countries (USA and Canada). However, with only 16 horse therapy participants, along with only a handful of other profiles provided by horse therapy experts, I can only provide transferability of cases based on the initial health and well-being status (before horse therapy was utilized) as reported by the participants, themselves. That information is provided in the results section, yet, as the reader will ascertain, each case varied widely in terms of health, although reports on experiences with horse therapy were still very similar. There will always be uncertainty with any study, but I think given the diverse number of cases and the general uniformity of horse therapy experiences reported, it demonstrates how transferable the results experienced by participants are likely to be experienced by others.

Dependability

While it is impossible to repeat the same study twice or ensure identical results, I believe this study is dependable and could be replicated with ease and would achieve similar results. After IRB approval, participant recruitment did take some time. but because participants responded from all over North America with varying organizational affiliations, horse therapy participants differed widely based on their initial health and well-being status before they utilized horse therapy. Furthermore, ecology experts came from a wide range of fields and places.

Every participant reported similar or relatable information and experiences from the comfort and privacy of their own homes and during their own time, so I feel confident that this same study (using either the same or a different group of participants) would yield very similar results. Perhaps, more or less participants would choose to provide more summaries or complete more interviews than what I received, but because this study's research questions were uniform and straightforward, and each interview was emailed in the exact same way and offered the same general conveniences and comforts for everyone, it would be easy for another person to replicate this study. Cases may vary – there are a wide range of health reasons that inspire special needs families to utilize horse therapy. Given the general consensus on overall impacts of the therapy itself, I have no reason to believe it would not be achieved again, even if every health case in a replicated study was completely different from here.

Confirmability

This area of trustworthiness is difficult to comment on for several reasons. In my literature review, I documented studies where authors commented on the need for a horse therapy researcher to have an experience and understanding of horses, as well as science and research, in order to truly create, develop, and conduct a horse therapy study. This is because horses are not purely scientific and are impossible to understand if a researcher has had no prior contact with them (Bachi, 2012; Hallberg, 2008).

If a person has no experience with animals, let alone horses and their mystical nature, horse therapy may sound dangerous and ridiculous (Bachi, 2012). For example, I was at one time called into question for introducing "dangerous horses" to "vulnerable populations" and "risking their safety" when I proposed horse therapy for my dissertation. Many people have no

idea that horse therapy already exists (and that I was simply proposing to study it as opposed to launching it as a pilot program) or that trained therapy horses are safer for special needs individuals to be around than trained humans (for example, this is why service dogs exist – animals are significantly more sensitive to danger than humans; Hallberg, 2008). If someone already possesses a general fear or fearful stereotype of horses and/or has not had the privilege of benefiting from their companionship or environment, the idea of horse therapy probably sounds quite threatening, and understandably so (Hallberg, 2008). Therefore, while readers with only horse experience and no science experience could likely confirm the integrity of this study, scientists with zero animal or horse sense likely could not (Bachi, 2012).. This is a qualitative study that yielded both confirmable and concrete results. My dissertation chair, Dr. Margaritis, objectively confirmed the integrity of the data.

Summary

Overall, the data collected from participants was fairly easy to code and analyze because participants answered their interviews with understandable, common, and relatable terms that created clear pictures of their experiences. All horse therapy participants experienced positive experiences with horse therapy, noting positive impacts on health and well-being (in both physical and metaphysical ways), but also in terms of fun and enjoyment for entire families. Ecology experts also agreed on the overall positive impacts horse therapy centers have on communities. Horse therapy is a viable local public health initiative, although, as with any public health initiative, funding and maintenance can be challenging, but worthwhile when done right. In Chapter Five, these results are discussed in greater depth, with their overall impact on public health as the primary focal point.

Chapter 5: Interpretation and Discussion

Introduction

The purpose of this study was to collect the experiences of horse therapy participants and ecology experts in an attempt improve understanding on the ways in which horse therapy impacts health and well-being and to inquire if horse therapy could be a viable public health initiative for the support of special needs family in local communities. The data collected were straightforward and easy to hand-code. All horse therapy participants surveyed unanimously agreed that horse therapy impacts health and well-being in positive ways. For some participants, these positive impacts were and continue to be life-altering. For other participants, horse therapy is simply a way to stay physically fit, socialize, have fun, gain confidence, and pursue a love of horses in an environment specially tailored to their needs and desires. Ecology experts also agreed that horse therapy initiatives are an enriching aspect to any community, and despite a few environmental impacts (like horse manure becoming a potential pollutant if not properly managed), horse therapy centers do positively contribute overall to a community, though funding them can be difficult.

Interpretation of the Findings on Health and Well-Being

In reference to my literature review, my data did not reveal anything new or surprising. As Bass et al. (2009), Chalmers & Dell (2011), and Wilson et al. (2015) found in their own studies, horse therapy helps a range of special needs children and their families, offering numerous physical benefits, such as improved core strength and coordination, the prevention of muscle loss, a refinement in motor skills, and even the ability to walk, which also matches my results. Just as Granados and Agis (2011), Gabriels et al. (2012), and Ghorban et al. (2013)

discovered, horse therapy can help children mentally, emotionally, and psychologically by increasing their confidence, teaching them to control impulsivity, allowing them to learn and practice self-control, helping them cope with and offset depression, and teaching them more about themselves. Positive impacts from my study which were not as heavily covered in previous horse therapy literature include abstract entities, such as fun, enjoyment, family bonding time, internal and external socialization, the teaching of life skills, and the inspiration and pursuit of future careers and a lifelong passion for horses. The reason horses work as therapy animals for special needs children (and everyone else, for that matter) is because they are fun and enjoyable to be around. The hard work and dedication that it takes to work with therapy horses is well worth the benefits they offer in return, such as the compassion, bonding, and understanding they impart. While most horse therapy peer-reviewed literature does not touch upon this subject, many horse book authors and philosophers like Dingman (2008) and Hallberg (2008) do. While this may be considered more subjective material, it *is* part of the experience that was regularly reported in my data, and therefore, it is part of my scientific paper.

Horse therapy is not pure science and it will never be measured or wholly quantified in that way (Bachi, 2012; Ewing et al., 2007). The reason horse therapy is so effective is because of the mystical nature, psychology, and emotions of a horse, the mystic nature, psychology, and emotions of a human, and the bond the two beings share in the stimulating environment of horse therapy (phenomenology and ethnography will be used below to explain this; Dingman, 2008; Hallberg, 2008). In this way, though, from a purely scientific and physical standpoint, riding a horse would not be much different than riding a bike or stepping on a treadmill. However, for horse therapy participants, there is a *huge* difference between riding a horse and riding a bike or

stepping on a treadmill or even sitting atop a mechanical horse, which is why horse therapy does not hinge from a purely scientific and physical standpoint (Benda et al., 2003). As one parent in this study described, "an hour spent with a horse certainly beats an hour with a normal OT session!" So far, previous literature has failed to describe exactly why that is (Ward et al., 2013). *Why* and how does horse therapy work, especially if there is not a purely scientific way to describe that?

Initially, this question is what inspired my first research question that probed about experience. Fortunately, I did find the answer among the data I collected on experience with horse therapy, but the real answer to "why and how" is best understood when that experience is broken down into a conceptual framework, which, for this study, involved phenomenology and ethnography. Therefore, the results from Chapter 4 on horse therapy as it affects health and well-being will be presented again here, using phenomenology and ethnography to define and explain their impacts.

Phenomenology

Winston Churchill once said, "there is something about the outside of a horse that is good for the inside of a man." A lesser known, but equally great man (who is a blacksmith and horse-shoer by trade and was interviewed as an ecology expert) said, "without any bias that human therapists may subconsciously have, horses are honest." The phenomenology of the horse is the derivation of horse therapy. More specifically, the phenomenology of horse therapy envelopes the physiology and emotional/mental capabilities, capacities, and nature of horses as living creatures who possesses the ability to interact and form relationships with special needs children,

in addition to offering physical stimulation and exercise based on their motion and domestication (for riding and groundwork; Dingman, 2008; Hallberg, 2008).

The following numbered list, based on the phenomenology of the horse as it translates to impactful horse therapy, were found within the raw data. Supportive inscriptions are provided underneath with references to previous literature in order to support and elaborate upon the idea of phenomenology of the horse (as its own entity) as being directly related to the specific results These are not just themes but components of the theoretical framework of horse therapy and its effectivity for special needs children and their families. Italicized terms represent actual terms used by participants in their interviews.

1. The motion of the horse is *physically therapeutic* and *healing*, and it *promotes physical exercise and activity.*

    - Due to their physiology and conformation (which define motion), horses have a wide array of physical impacts on individuals who ride and work with them (Benda et al.; Bass et al., 2009; Gabriels et al., 2012; Granados & Agis, 2003).

2. Horses are *healing, calming, gentle*, and *patient.* Horses provide *hope, friendship, unconditional love, unconditional acceptance, happiness, freedom from disability*, and *independence.*

    - By nature and autonomy, horses provide an opportune "workspace" where individuals can relax, learn, and work through their challenges. When the basic emotional needs of individuals are met (such as love, acceptance, and patience) and social barriers/expectations are removed, individuals are

able to more freely and easily work through their challenges. Within the proximity of a horse, some individuals may feel they no longer face any challenges at all. In many cases, riding or working with a horse is the first time individuals gain a true sense of freedom and/or independence (Dingman, 2008; Hallberg, 2008; Symington, 2012).

3. Working with horses is *fun, joyful, exciting, stimulating, rewarding*, and *challenging*.

- When individuals enjoy horses and want to work with them, they are more likely to work hard and work through the challenges they face (Champagne & Dugas, 2010; Shurtleff & Engsberg, 2010; Silkwood et al. 2012). Horses also provide instant feedback and both short-term and long-term rewards. For example, a child may finally gain enough strength to get the horse walking on his or her own, and as soon as the horse accepts the strength of aid and walks, the child feels an immediate result and can take pride in that hard-earned success. That is a short-term reward. Long-term rewards occur when the child is able to get the horse to walk on his or her own on a regular basis (and also learns that hard work pays off), which leads to a stronger bond between the two that then leads to more advanced riding movements, like trotting.

5. Horses *adapt* and *interact* with each child in a special and unique way, forming a *special bond* with children that make them *feel special and loved just as they are*.

- Quite often, children with special needs are (or feel that they are) isolated and misunderstood from and by others due to their unique needs. Horses do not

discriminate, and because they bond with each individual separately and adapt to their special needs during work, a holistic connection is formed, allowing for each individual to receive the help and stimulation he or she needs (Dingman, 2008).

6. Horses offer *"unique metaphors for life's challenges which allows for introspection;" it is easier to "open up" with horses.* Horses *show* and *reflect an individual's thoughts, feelings, and behavior, which allows self-impact (in terms of awareness, behavior, control, etc.) to be analyzed and understood.*

- Horses and individuals adapt to each other to form a bond (Ward et al., 2013). For example, if an individual is stubborn or defiant – quite often – the horse will adopt that persona, too. An individual has likely experienced the frustration of others when he or she refuses to comply, and the individual may then feel that frustration for the first time towards a 2,000lb horse that refuses to walk forward, which presents both a challenge and a metaphor. The individual soon learns that by adjusting his or her attitude and the way he or she is asking for work to be done, the horse may soon obey, or at least compromise. Furthermore, when individuals spend increasingly more time with horses, develop a bond, and establish trust, they feel more comfortable opening up and working through their deepest issues because they know their horses will not judge or love them any less. Individuals also feel compelled to be better people for the sake of their horses.

7. Working with horses elicits *compassion* and *concern* for the horse from the individual.

- As the bond with the horse is nurtured, individuals learn to put the horse first before self. Especially for children, this broadens their emotional and mental capacities and forces certain (negative, harmful, destructive, and/or selfish) behaviors to be controlled (Gabriels et al., 2012).

8. Horses are *mentally smart* and emotionally capable with provides *mental/emotional healing and stimulation*. Furthermore, the *mental/emotional connection* horses make available to humans directly fosters *impacts on physical health and well-being.*

- The emotional and mental state of the horse and the desire for an individual to adapt to it directly affects the physicality of the individual, which then translates to impact on health and well-being (Champagne & Dugas, 2010; Shurtleff & Engsberg, 2010; Silkwood et al. 2012).

In summary, the phenomenology of horses (and horse therapy) primarily involves the nature, physiology, and autonomy of horses, along with the connection that individuals form with them (Dingman, 2008). The connection between horse and human is both physical and metaphysical (specifically, of mental and emotional qualities), but one aspect cannot exist without the other and in order for horses in horse therapy to be impactful to an individual. Working with horses – on the ground or from atop their backs – is physically demanding and challenging, and no matter what capacity an individual is who undertakes working with horses, physical skill must be imparted (by an instructor) such as balance, strength, endurance, and coordination. These skills take time to learn and build, but they are impossible to acquire and apply to the horse if an emotional and mental connection to the horse is not also established (Hallberg, 2008).

Horses require understanding, and in return, they offer it. Horses are gentle, quiet, kind, and compassionate by nature (Hallberg, 2008). Horses can also be spooky and flighty if they do not feel safe or are unable to develop trust in their leader. Fueled by their primordial herd-instincts, horses desire leadership and companionship above anything else. They are as eager to forge friendship and provide obedience to their human participant as their human participant is eager to provide friendship and leadership to the horse, and this is why the human-horse bond works and becomes intimate.

Yet, this bond is extremely delicate. The human participant must trust the big, strong horse to allow close proximity and give up control of itself to the human and the human must permit the horse to move naturally (as daunting as it might first seem). The human must also work to understand and respond to the horse's needs, and the human must desire to learn the horse's language so that leadership can be confidently transferred to the human under mutual consent. By default, the horse becomes increasingly sensitive to the human's needs – if either partner falters in their roles, the trust between the two will be broken and working together will become impossible.

Working on and building the trust and connection between horse and human is part of what makes riding and working with horses fun and exciting. It gets stronger with every new hour spent working on it and more and more is achieved as it does. It is the instinctual desire of both the horse and the human to protect and grow that connection to make it intimate, and this gets accomplished through learning and working together (which requires physical and mental/emotional exercise, and this is how horse therapy makes impacts on individuals physically and mentally/emotionally). Every participant in the study expressed a love of horses.

Likely, horses would not be a successful form of therapy for individuals who do not have an interest in horses or do not grow to love them during therapy sessions. If an individual were to harm or hurt a horse on purpose too many times, that horse will lose complete trust in the individual and refuse to work. It is the desire to connect with the horse physically and mentally/emotionally that creates holistic physical and mental impacts on the individual in horse therapy.

Ethnography

Horses, by themselves, are not accessible to special needs individuals for horse therapy without a supportive environment (horse therapy farms and centers) and the corresponding culture as created and managed by horse- and horse therapy- people (those who know how to take care of horses and then harness and organize the phenomenologic strengths and abilities of horses to provide therapy in a meaningful way; Dingman, 2008). The phenomenology of horses, combined with the ethnography of a barn/farm environment and qualified, trained staff and volunteers who offer horse therapy sessions to children and facilitate their families and caregivers are the two primary driving elements in the success of horse therapy. The following list of results organized based on the ethnography of horses, horse culture, trained staff and volunteers, and the farm/barn/horse therapy center environment as it translates to impactful horse therapy were found within the raw data. Supportive inscriptions are provided underneath with references to previous literature in order to support and elaborate upon the idea of ethnography of the horse and horse therapy culture and environment as being directly related to the specific results, not just as a theme but as a component of the theoretical framework of horse therapy and

its effectivity for special needs kids and their families. Italicized terms represent actual terms used by participants in their interviews.

1. Staff and volunteers are *warm, welcoming, inviting, understanding*, and *accepting.*

    - In this way, the nature of horse therapy staff/volunteers are extensions of the horses themselves, so individuals who may be leery or afraid of social encounters with the general public experience positive encounters with horse therapy staff and volunteers. This helps individuals become more comfortable and confident with socialization with others – first, within the horse therapy/farm environment, and second, outside of the horse therapy/farm environment among peers (Dingman, 2008).

2. *Horse therapy staff* and *volunteers* are *trained* and *qualified* to work with both special needs individuals *and* horses. Most horse therapy centers are primarily composed of *volunteers, which means they choose to work in this field, they want to help, and they thoroughly enjoy their work.* Horse therapy volunteers provide a form of external *social support, trust*, and *socialization* that many individuals have only experienced within their immediate network of family and caregivers.

    - Horse therapy staff and volunteers ensure the physical and mental/emotional safety of individuals, while teaching them how to work with and ride horses and while helping to target specific physical and mental/emotional needs and challenges during the therapy sessions to achieve improved health and well-being. They also work to interact with each individual and grow relationships with them, in order to instill

confidence and assure acceptance and to create positive social experiences for individuals who may not have had good experiences with socialization in the past or who may not have experience with socialization at all (CanTRA, 2016; PATH, 2015; EAGALA, 2010).

3. Staff and volunteers are trained to harness the phenomenology of horses to shape *tailored, customized sessions for individuals* and offer general instruction on working with, caring for, and riding horses.

- Without the presence of qualified staff and volunteers who are trained to understand how therapy horses and special needs kids work as individuals, and then help shape them to work together based on their unique needs and personalities, horse therapy would not exist (CanTRA, 2016, PATH, 2015; EAGALA, 2010).

4. With trained staff and volunteers working with their children, *parents/family member/caregivers can "sit back," relax, be happy, and enjoy watching their children thrive and excel with horses without worrying about safety or supervision.*

- Parents report feeling "normal," "happy," and "relieved" getting to observe their child participate in an activity and thrive, just like any other child and their parents get to experience. Because staff and volunteers are specially trained to work with special needs individuals, they are not just safe, but the individuals are also set up for success. This provides parents and other family members/friends with enjoyment and peace of mind (Dingman, 2008; Ward et al., 2013).

5. Learning about horses from horse therapy staff and volunteers provides individuals with life skills that can translate into a *lifelong passion, sport, hobby*, or *career* (in horses and/or horse therapy).

- Horse therapy provides lifelong skills and inspiration, which sustains the physical and mental/emotional impacts it imparts (Hallberg, 2008; O'Haire, 2013).

6. The horse therapy center/horse farm environment provides a *unique atmosphere for internal networking and socialization.*

- Most horse therapy centers offer group lesson sessions, where several individuals all ride and/or work with individuals together. This gives these individuals a chance to connect and interact with the help of horses (Dingman, 2008). During horse therapy sessions, parents have a chance to meet, visit, share stories and information, and connect with each other in observation areas. Often, family members and friends will congregate and bond during the session as they observe their child/individual ride or work with horses. When individuals learn to work with and help care for the horses, they become part of an inclusive group and gain a sense of belonging at the farm/center solely based on their ability to manage horses at the farm/center. For many individuals, a farm or horse therapy center is one place where they feel like they belong, experience teamwork, and are not judged or treated in accordance to their unique challenges, conditions, or circumstances (Dingman, 2008). Horse farms and horse therapy centers

are all large operations where there are always many chores and tasks that need to be completed, from sweeping aisles to mucking stalls to grooming horses to filling water buckets to taking grain and hay inventory. There is a job available for any person at any age and skill level, so if individuals want to participate and help care for the horses they love so much, there is always an opportunity.

7. The horse therapy center/horse farm environment provides a *unique atmosphere for public/external networking and socialization.*

- Horse farms/therapy centers are fixtures within local communities. Most horse therapy centers are run by volunteers, funded by donations and sponsors, and supplied by local businesses. Horse-keeping requires an abundant supply of resources and constant care and attention, and therefore, horse farms/horse therapy centers require a constant influx of outside help and support from the local community (CanTRA, 2016; PATH, 2015; EAGALA, 2010).

8. Horse farms/therapy centers are the *only place where horse therapy can exist.*

- Horses can exist in a number of habitats and domesticated arrangements, but horse therapy programs (with qualified staff and public facilities) require designated horse farms and/or therapy centers in order to be effective. The phenomenology of horses as it impacts health and well-being for special needs children cannot exist without the ethnography of horse therapy farms/centers (Dingman, 2008).

The phenomenology of the horse and the ethnography of horse farms/horse therapy centers are the core of "horse therapy." As both a center and a program, horse therapy provides a wide range of short-term and long-term health and well-being benefits, many of which are guaranteed to be experienced by special needs children and their families (provided the child is interested in horses), regardless of condition or circumstance. This is proven in both the literature and in this study's results on the positive impacts of horse therapy on health and well-being. For this study, the positive impacts were numerous and varied, which included physical benefits like increased mobility, core strength, and spine strengthening and straightening and a decrease in wheelchair use, hospitalization, harmful impulsivity, depression, and anxiety. Well-being and quality of life benefits included increased happiness, socialization, confidence, self-esteem, positive moods, self- and family-pride, family bonding, and family satisfaction, along with a decrease in anger, bad behavior, shyness, lack of interest, and isolation.

When organized by the grounded theory, these results can be directly explained by the phenomenology of the horse as its own entity that connects to, bonds with, adapts to, and provides movement, exercise, mental stimulations and motion for special needs individuals (Creswell, 1998; Dingman, 2008). The ethnography of horse therapy centers includes the welcoming, trained, experienced, patient, kind, and encouraging volunteers so many participants mentioned, along with the family-friendly environment with numerous opportunities for socialization, and the general presence of horses and the pastoral life they lead. These factors provide additional components that contribute to the physical, emotional, mental, and psychological therapy, growth, and healing reported on by participants (Creswell, 1998; Dingman, 2008).

Although the phenomenology and ethnography of horse therapy has remained fairly unexplored in the literature until now, the health and well-being results presented above are very similar to what has been found in previous studies (Bass et al., 2009; Ewing et al., 2007; Gabriels et al., 2012; Klontz et al., 2007). This provides evidence to support how effective horse therapy is for a wide range of special needs individuals and their families. It also suggests misfortune; so many people that would benefit from knowing about horse therapy (which includes privatized and public health professionals) are completely missing out on the positive impacts to health and well-being that it offers. Unlike virtually every type of special needs therapy and treatment, there are no negative health and well-being impacts or side-effects from horse therapy. This is another element that has gone unaddressed in previous literature – the fact that there are no negative impacts and side effects with horse therapy (Bachi, 2012; Granados & Agis, 2011; Ward et al., 2013). Certainly, there are concerns. Horses are big animals (and some individuals may be allergic) and there is inherent risk in working with them, but therapy horses are especially trained and monitored for safety, and so, the risk is miniscule (Dingman, 2008' Wallberg, 2008).

No participants in this study reported an injury from a horse, and some participants had been involved with horses for more than 20 years. Participants in this study did report logistical concerns that have not been reported in other studies. Cost and missing sessions due to sick staff, weather, or sick horses were mentioned as potential logistical downfalls to horse therapy. Furthermore, cost and accessibility are also addressable problems. Better funding and robust programs with weatherized facilities and backup horses and staff would resolve these barriers.

Interpretation of the Findings on Ecology

Repeated studies on the benefits of horse therapy become redundant and irrelevant if information on how to start and manage horse therapy centers in local communities is not also made available. Surprisingly, Jump (2012) is one of the only scientific studies that delve into the ecological impacts of horse farms, boarding stables, and riding barns as they relate to local communities. Because this study was intended to be used for public health purposes (with the goal being to propel horse therapy as a public health initiative since it is so beneficial to a wide range of special needs individuals and their families), it only made sense to analyze not only how horse therapy centers are started, but what impacts they may have in local communities. Public health initiatives of any kind depend heavily on non-health aspects like economics and community development and support in order to be viable. In turn, public health initiatives that are bad for the environment or detract from local communities for other reasons are typically squashed before they begin. Therefore, it was important to inquire about all of these different aspects, relating to horse therapy centers and their ecological impacts on the community, before proceeding with advice for communities on actually starting or managing centers of their own. The findings on the ecological impacts of horse therapy are provided just as they were in Chapter Four, except this time, supportive inscriptions from direct quotes and summarized interviews from the ecology experts are included for data synthesis. Literature references are not included in the inscriptions because scientific literature on this topic does not yet exist (Bachi, 2012). Italicized terms are used to highlight those that were repeatedly found in interviews and used as coding terms. The information below each numbered result statement (which was composed and organized using the grounded theory) has come from interpreting the raw data from ecological

experts and supported by passive references to horse therapy operation in horse therapy literature. A starter blueprint for horse therapy center initiatives, along with suggestions and supplementary commentary on starting and managing centers as provided by ecology experts, is offered at the end of the section.

Community Development

1. Communities benefit from the *enrichment, organic/natural,* and *cultural aspects that the presence* of horse farms/horse therapy centers and horses provide.
    - Farm life and special needs outreach and support are two critical outposts in community enrichment. Farm life, especially in urban areas, is a novel and educational focal point to young and old people, and because horse therapy centers and farms are public, access to horses and farm life becomes widely available (Dingman, 2008; Wallberg, 2008). Furthermore, it is important for communities to provide safe havens for special needs families, where there is open interaction with and for the public to both give (through donations and volunteer work) and take (accessing therapy for any reason) as each citizen sees fit (Dingman, 2008; Walt et al., 2013).
2. Communities become "*stronger one community member at a time."*
    - Horse therapy is highly beneficial to anyone local who participates in it. It is an enriching activity for any person at any level (Wallberg, 2008). Therefore, anyone who helps to support it or participates is better off, and that makes for a strong community.

3. Communities that support horse therapy farms/center become *better developed* because special needs individuals and their families have a haven to *receive help, support, acceptance, purpose,* and *socialization*.

- Currently, there are very few local, family-oriented programs for special needs individuals and their families that offer tangible help and support (Heller, 2016; Riva, 2016). This is an epidemic across North America. Horse therapy centers and horse therapy programs are able to help a wide range of individuals and help meet a wide range of needs and social challenges special needs families experiencing nation-wide (CanTRA, 2016; EAGALA, 2010; PATH, 2015).

4. Given the health and well-being benefits experienced by everyone who participates in horse therapy, communities provide *"a better quality of life to all its citizens"* by supporting horse therapy centers.

- According to one ecology expert, "Productive, healthy people compliment a community." Horse therapy positively impacts health in communities, and as previously stated, everyone can benefit from horse therapy throughout their lives.

5. Therapy horses are given a *purpose* and provided with excellent *care;* horse therapy centers are a good example of *proper animal husbandry, stewardship*, and *welfare.*

- At horse farms and horse therapy centers that offer certified horse therapy, horses are very well cared for and find purpose as therapy horses. Therapy horses can be bought, leased, borrowed, rescued, donated, and

saved from slaughter pens or humane societies (Dingman, 2008; Wallberg, 2008). They do have to go through trial and training periods to become ready to be therapy horses. The demand for good horse therapy horses prevents many perfectly healthy, capable horses from being destroyed, as many often are when owners cannot afford to pay or care for them (so they either get euthanized, abandoned, or dropped off at humane societies; Dingman, 2008). These types of horses can be (and often are) donated to horse therapy centers to enjoy a new life and provide life-changing therapy to humans.

Economics

1. Horse therapy centers *create a demand for local resources and products from local businesses.*

- Horses and horse-keeping require local hay, grain/feed, bedding, leather goods, tack, blankets, and other supplies from tack shops, hardware stores, and feed shops (Wallberg, 2008). In this way, local economies benefit from horse therapy operations.

2. Horse therapy *creates a demand for local services* from specialized professionals, veterinarians, craftsmen, entry-level workers, and volunteers.

- Horses and horse-keeping require specialized services from a range of professionals and entry-level workers, such as veterinarians, equine dentists, equine chiropractors, equine massage therapists, blacksmiths, farriers, leather craftsmen, riding instructors, certified therapy instructors,

horse trainers, exercise riders, barn staff, and volunteers (all of who require personal horse clothing, barn wear, and supplies from local shops to safely and effectively work around horses). In these ways, local economies benefit from horse therapy operations (Jump, 2012; Wallberg 2008).

3. Because many horse therapy centers are *non-profit*, they *"may not generate taxes for a municipality that a for-profit center occupying the space would generate."*

    - This could be considered a disadvantage of horse therapy and horse therapy centers (Jump, 2012).

4. Horse therapy *provides full-time jobs* in a variety of fields.

    - One ecology expert stated, "I'm a 60 year old farrier (blacksmith/horseshoer) who has made a living with horses for 25 years. Being seriously dyslexic and right-brained, college was never an attractive or viable option for me. I'm also a classic 'type A' personality, so urban dwelling would likely have lead to a disastrous outcome. I happily reside at my rural home with a dog and (currently) two horses…I found my niche shoeing horses, largely and subconsciously due to its therapeutic effect on me. Working in mostly rural and suburban atmospheres, traveling the back roads, and associating more with horses than people has kept me 'level' sane and out of trouble."

Environment

1. Farms or centers with horses *"may emit light odors from manure and hay/straw storage"* within a quarter-mile radius.

    - This could be considered a disadvantage of local horse therapy centers (Jump, 2012).

2. Land designated for horse-use and *turnout protects and enhances local ecosystems* and coincides with land-preservation initiatives.

    - When properly developed and maintained, horse therapy farms and centers protect local wildlife habitats and foster wildlife refuge and recovery. Horse therapy farms and centers depend on natural, clean water sources, provide natural spaces for a range of large and small wildlife animals to live, and keep the land and natural features in tact because horses benefit from a natural habitat, too (Dingman, 2008).

3. There can be *"pollution from excessive transportation."*

    - This could be considered a disadvantage of local horse therapy centers. Staff, volunteers, and horse therapy participants all need to travel (usually by car) to their horse therapy center, likely several times a week (PATH, 2015).

4. *Horse manure and other farm waste products can cause pollution if they are not properly managed* (this does not necessarily cost money to do and many areas offer free removal if on-site processing is not an option). However, horse manure is often re-

purposed as *fertilizer and compost*, so it may only be considered a *pollutant* in certain areas, whereas, in others, it is considered a *positive by-product.*

- This could be considered an advantage or disadvantage depending on the farm type and the local services available and seasonal compost demands (Jump, 2012).

Land Management

1. The provision of space for horse farms/horse therapy centers are *a good use of land because they keep concrete and urban development away* and *"prevent cities from overtaking nature."*

- Horse farms/therapy centers are considered a good way to manage land because they can be used to help the community without damaging or endangering natural habitats, which can still be enjoyed by the community (Dingman, 2008).

2. Land designated for horse farm/horse therapy use ensures that local citizens always have *"a place to go" and experience nature.*

- Land allotted to horse farms/therapy centers is publically accessible, and therefore, open to all citizens for enrichment and enjoyment (Dingman, 2008; Wallberg, 2008).

3. Land allotted as horse therapy farms/centers keeps the tradition of animal husbandry and farming alive, especially in urban communities where it has become *a lost art.*

- Because horse therapy farms and centers are a haven for an array of people (including the elderly and at-risk youth who can serve as barn

> helpers and volunteers), the land becomes a public, enriching, educational gathering place without destroying the surrounding environment with concrete structures and destructive development characteristic of urban areas. Horse farms/therapy centers are a natural, pastoral gathering place for a highly diversified number of people (Dignman, 2008).

A Horse Therapy Initiative Blueprint for Prospective Communities

As previously mentioned, this study used the grounded theory to match and translate its results into explanations on why and how horse therapy works and what types of health and well-being results might be expected from it. At a micro-level, the phenomenology of the horse and the ethnography of horse therapy and the horse therapy environment intersect in grounded theory and can be used to explain the health and well-being results horse therapy participants typically experience. At a macro-level rooted in grounded theory, these three themes/components (horse phenomenology, horse therapy ethnography, and health and well-being impacts as organized by grounded theory) can be compiled together and used to explain why horse therapy centers are extremely beneficial to local communities, as has been fleshed out above in the numbered ecological lists with supplementary explanation and references from the literature. To conclude the discussion of grounded-theory at the macro-level with respect to horse therapy and to maximize the use of this study's data, the following figure has been devised as a blueprint/spreadsheet that prospective public health community officials could use as a guide in understanding, devising, and assessing the viability of local horse therapy public health initiatives, given the fact that 100% of horse therapy participants verified the positive effects of horse therapy and 100% of the ecology experts in this study endorsed horse therapy centers as a

worthy public health investment. The information provided below is summarized and meshed reports provided by ecology experts and horse therapy participants from this study.

Start-Up Needs and Costs for Independent Facilities: An Overview

Most counties require horse owners to have at least one to five acres of open land per horse being kept. To keep 15 to 20 horses comfortably, with plenty of turnout pastures, space for manure management, a hay field (to save money on buying hay), stall barns, storage areas, an indoor arena, an outdoor arena, and room for the public to park and participate, 25 to 50 acres of property are needed, which can be bought from $500,000 to $1,000,000+ all set up (depending on location). Modifications to the facilities may need to be made to accommodate special needs individuals, such as the addition of access ramps, family bathrooms, riding lifts, and observation areas for families. Therapy horses, if not donated or provided free for lease, can average $2,500 to $5,000 per horse. Trained horses are usually ready to provide horse therapy by 5 or 6 years old and can live to be 20 to 30 years old on average. Basic tractor and manure spreader equipment is required to maintain horse farms and therapy centers. If not donated, bought used, or provided in the farm sale, new start-up equipment can cost approximately $30,000. A truck and horse trailer are also necessary for safe horse-keeping, but these are often owned by individual horse owners, instructors, and trainers, and they do not necessarily need to be owned by a horse farm or center, provided horse management staff have access to a horse trailer and corresponding vehicle in case of an emergency.

Horse Maintenance Costs (up to $400 per horse per month in some areas of North America, if zero supplies and services are donated by sponsors, volunteers, and local businesses):

Bedding (Shavings/Straw)
Hay
Grain/Feed
Supplements
Farrier/Blacksmith
Veterinarian Services
Manure Management (on larger farms, this can be done for free on-site)
Fuel (for farm equipment and back-up generators)
Barn Chore and Horse Management Payroll
Fence/Sheds/Arena/Stall Repair
Horse Supplies (buckets, boots, blankets, vitamins, halters, lead ropes, etc.)
Horse Training/Tune-Up

Farm Maintenance Costs (dependent on center size and cost of local utilities):

Electricity/Hydro
Heating/Cooling
Insurance
Water
Farm Equipment Maintenance
Trash/Waste Removal

Horse Therapy Costs (dependent on the size of the program and local standards of

living):

Certification Renewals (up to $1,200.00 for CANTRA per instructor)
Instructor Salary
Administration, Grant Writing, and Volunteer Recruitment Costs
Tack Repair
Medical Supplies
Telephone/Internet
Banking Fees
Staff Wages

Staff/Volunteer Horse Therapy Session Requirements/Information:

Three Volunteers Minimum (two sidewalkers and one horse leader) Per Horse and Rider/Participant
One Certified Instructor (Minimum) Per Session
Offering competitive wages as a charity can be difficult.
Keeping well-trained, committed volunteers can be a challenge.

Miscellaneous Information:

1) Some centers have as many as 20 paid staff and over 200 volunteers to run a full-time horse therapy program with 100+ riders/participants.

2) Besides charity tax breaks and small grants, there are not always federal, state, or provincial initiatives.

- Ecology experts varied in their answers on what types of grants they received, if any. This may be a result of less experienced grant writers or knowledge on how to apply for grants, etc.

3) Transportation for special needs individuals and volunteers can both be challenges.

- Some centers offer transportation for a fee.

4) Communities do not necessarily have to start centers from scratch. Many can partner with and modify local horse farms with existing facilities in the private sector through leases **to create viable horse therapy centers. Leasing facilities is an option that could greatly save on costs.**

5) The price for a horse therapy session varied from $25 to $50 per session, depending on the center. This fee was sometimes covered or partly-covered by sponsors, insurance, and local pay-help programs, but many parents, adult participants, and ecology experts all remained concerned about the cost.

- One center quoted that it cost $990 per horse therapy participant per year, in order to keep the entire center running, excluding donations and volunteer time. At $40 per session X 52 weeks in a year, a center has the ability to

make $2,080 per rider per year, but even with 20 riders, $41,600 per year would not be enough money to cover running costs of approximately 10 horses, facility maintenance fees, instructor salaries, and the coordination of at least 50 volunteers (three volunteers per participant are usually required for a session, and many alternates and extras would be required because of scheduling, plus barn and administration volunteers are needed). Therefore, federal and local donations, grants, and sponsorships are absolutely vital to the operation of horse therapy centers.

- Covering costs are a challenge, but as one ecology expert stated, "benefits outweigh the costs" in horse therapy.

6) Benefits to volunteers include exercise, time spent outdoors, time spent with animals, socialization, a way to give back, gives retirees and the elderly a new purpose, and it is rewarding.

- One ecology expert stated: "I love seeing the progress [of participants]. And I realized I really enjoy making a difference in people's lives. So now I am hoping one day to quit my corporate job and work at one of these centers."

Figure 1. A blueprint of basic plans, requirements, and recommendations for horse therapy as a public health community initiative, based on the compiled reports, recommendations, and endorsements from horse therapy participants and ecology experts.

Limitations to the Study

A literature gap I was not able to fill was collecting commentary from special needs children, themselves, and I think this is the biggest commentary void that still remains in scientific papers on horse therapy for special needs children (Ewing et al., 2007). However, I do not believe there are any issues in trustworthiness in regards to the data that was collected from parents and adults who had horse therapy as children – they had no reason not to provide truthful answers at their own convenience and knowing that full confidentiality would be upheld (Creswell, 1998). Due to the strict guidelines of Walden's IRB regarding this study special needs children could not be included in the study. Although participants provided an account of

their true experiences, observations, and feelings to the best of my knowledge, there are still limitations and risks of bias in self-reporting (Creswell, 1998).

As for the ecological portion of my study, I asked ecology experts incredibly vague and basic questions, largely because there has not been a study like this one conducted before, and I was not sure where to start (Bachi, 2012; Jump, 2012). As a first-time qualitative researcher with a quantitative research background, I was also afraid of asking questions with too much detail or presumption that might limit or subjectively shape feedback. However, some experts asked for further direction and specification with the questions after I sent them because I did not include enough detail in the beginning, so it is possible I did limit ecological information because I did not provide concrete starting points or ended up shaping answers with the additional detail I offered. The truth is that I just was not sure what to look or ask for, initially, when it came to learning more about the meaningful ecological impacts of horse therapy centers on communities.

Recommendations

I believe it is crucial that special needs children (and adults) are given the chance to speak for themselves (with personal and parental/guardian consent) on their experiences with horse therapy and the health and well-being impacts that result. Only by taking away their voice are they truly vulnerable (Dingman, 2008; Ewing et al., 2007). They deserve the opportunity to express themselves, and their opinions, experiences, thoughts, and feelings should be explored and validated. Ultimately, the whole purpose of horse therapy is to help them – without their input and guidance, it is impossible to know if horse therapy is being understood, molded, and designed in the proper ways (Granados & Agis, 2011). In public health, target audience feedback is pivotal to the refinement of any type of public health outreach (Creswell, 1998).

Because horse therapy programming is a viable public health initiative (and is currently operating as one by many center directors who provide funding and assistance to families who are unable to pay out of pocket), it should not be treated any differently (Dingman, 2008; Ewing et al., 2007). Qualitative studies on horse therapy centers that already operate under public health initiative would also be beneficial to follow and track, both quantitatively and qualitatively.

A common concern that was raised among the participants from this study involved the cost of horse therapy and the fact that most insurance does not cover it. This is likely because it is not recognized as a medical expense since treatment does not take place in a clinical setting nor does it usually involve clinical practitioners for administration. Given the immense positive health impacts and family support horse therapy offers special needs individuals, this is a real shame for families who depend on horse therapy for relief and who experience concrete changes in health and well-being as a result of it.

There is enough quantitative and qualitative literature to prove horse therapy's impact on health and well-being, insurance coverage reform in favor of horse therapy sessions being covered is warranted (Bachi, 2012; Wallberg, 2008). This type of research may also help illicit better, more robust funding for horse therapy from local and federal government initiatives, which, in turn, might publicize horse therapy and slowly turn public perception until it is not such a foreign concept to those who are unfamiliar with horses and animal-therapy, in general (Bachi, 2012). Another recommendation for future research is to significantly widen the scope of ecological exploration, perhaps in the form of a qualitative study that follows the evolution of a start-up horse therapy center (as well as a long-standing one) and all its activities, challenges,

successes, and the scope of community involvement for a year or more (Ward et al., 2013). This would provide a much more detailed snapshot and in-depth blueprint other communities could follow and learn from, if and when horse therapy centers become more popular public health initiatives.

Implications to Public Health

Unfortunately, this study alone does not have the capacity to enlighten the public's perception on horse therapy or make it more widely available to families who could benefit from it, despite all of the positive attributes of horse therapy for special needs individuals and all of the ecological benefits of horse therapy centers for local communities (Bachi, 2012, Chalmers & Dell, 2011; Dingman, 2008; Granados & Agis, 2011). This study more qualitative evidence to the horse therapy literature for scientific professionals to access, and hopefully, this literature better explains why and how horse therapy works. However, dissemination and open-mindedness will be the key to conjuring change among public perception (Dingman, 2008; Hallberg, 2008). If dissemination is successful, there are a variety of impacts to public health that horse therapy initiatives could accomplish. Before that is discussed, it is important to address the final conceptual framework component used in my study – the grounded theory.

In this study, phenomenology and ethnography have been used to theorize the experiential and environmental/cultural components of horse therapy. It is also explained why, together, they can produce quantifiable, scientific, and concrete health changes (which are positive) among participants in a very unscientific, non-quantifiable atmosphere and way. Of course, the phenomenology and ethnography of horse therapy are both defined (in different ways) by the horses, themselves, and in their abilities to bond, adapt, connect, and move with

and under humans (Hallberg, 2008). If this was not the case, the physiological act of riding a bike or even a mechanical horse, for example, would and should produce the same health results as a live horse, but it does not (Benda et al, 2003). The phenomenology and ethnography of horses and horse therapy explain why. Both of these elements fit into the grounded theory, but on their own, they only provide a small snapshot that is not directly contributory to public health without additional explanation and development.

While phenomenology and ethnography explain the extreme efficacy of horse therapy, in terms of health and well-being, on a micro-level, they also help to explain some of the larger reasons that horse therapy is so beneficial to communities. They also help to account for efficacy and viability as programming in public health, when considered on a macro-level at a population-tiered perspective. Horses are pastoral by nature and they provide a pastoral setting for upkeep (Dingman, 2008). Pastoral settings are appealing to public populations, and therefore, it makes perfects sense why horse therapy centers might be pleasing fixtures in local communities, especially in urban areas where "nature" is often severely lacking (Dingman, 2008; Wallberg, 2008). Horses require lots of resources and supplies, which keep many different types of farmers, tradesman, caregivers and professionals employed. Horse therapy, in general, attracts lots of horse therapy participants, who may turn to the community in seek of other services and resources, like restaurants, cafes, tack shops (where horse related items are sold), and even hotels (some participants travel long and far for their horse therapy sessions; Jump, 2012). There are downfalls to horse therapy centers, as there are with any public health initiatives (such as funding and waste disposal), but these are all easily managed with the proper skills and tools. All of the ecology experts and horse therapy participants agreed that horse

therapy and horse therapy centers are wonderful public assets to communities and that the immense benefits of them far outweigh any costs.

The goals of public health are to reduce disparities among the public and to help as many sub-populations as possible receive the health information, support, and care they need to thrive. Special needs families suffer from a wide range of disparities that horse therapy resolves (Creswell, 1998). Horse therapy provides physical, mental, emotional, psychological, and social support for special needs individuals and their families, and horse therapy centers indirectly impact public health by boosting local economies, protecting the environment, serving as good land and animal stewardship, and bringing communities together (Bass et al., 2009; Dingman, 2008; Wallberg, 2008; Ward et al., 2013). More specifically, as the results in this study have shown, horse therapy aligns with public health in the following ways:

- improves health and well-being for a multitude of special needs families and many other types of individuals
- reduces public and private special needs health costs
- fosters special needs family networking
- raises awareness on and support for special needs individuals
- provides recreational/social/therapeutic activities for people who are often limited in what they can do in communities
- offers adults with special needs an activity they can participate in (many states and provinces take away services and benefits from special needs children when they "age-out" of the school system)

- offers excursions for high school students and nursing home residents to come to tour and learn
- offers positive team building for corporate staff who come to volunteer in groups, it brings communities together
- provides a place for vulnerable and at-risk populations (youth, teenagers, the elderly, etc) to volunteer, learn and enjoy nature
- enhances the environment
- protects and support wildlife habitats
- enriches urban areas
- improves the local economy and supports local businesses and professionals
- contributes to community development and awareness in terms of animal husbandry and welfare, and
- promotes overall self-help and improvement

Using the ground theory and to illustrate the points above, the following figure has been devised:

Figure 2. The cycle of horse therapy as a public health initiative and its respective impacts on the community at a macro-level.

Based on Figure 2 and given the results from the ecological portion of this study, communities do not have anything to lose by funding, supporting, and promoting horse therapy as a public health initiative. If horse therapy centers were better funded and more widely accessible, millions of special needs individuals could experience the beneficial effects and modes of support families in this study described. Starting and managing a horse therapy center certainly takes work, dedication, and time, but with a 100% success rate (with respect to the therapy, itself), the effort is warranted. Horse therapy is also a type of therapy that is non-discriminatory and can cater to anyone's needs, which makes it a type of therapy public health can openly and sustainably endorse and promote for everyone (Dingman, 2008). In fact, horse therapy is already

becoming a public health initiative. In London, Ontario – just as data analysis for this study was wrapping up – a new center for local servicemen and servicewomen suffering from PTSD was opened, and the center includes a small horse therapy division that will slowly be expanded upon as the initiative develops. For communities, horse therapy can serve a wide range of people – not just those with "classical" or "typical" special needs (Bass et al., 2009; Dingman, 2008; Gabriels et al., 2012; Granados & Agis, 2011; Wallberg, 2008).

Conclusion

The immense health and well-being benefits of horse therapy and the positive ecological benefits horse therapy centers have on communities are clearly demonstrated by my study. The greatest challenge in the promotion of horse therapy as a public health initiative is perhaps in defeating the stereotype that horse are dangerous and that a lack of hard, quantifiable information on the way horse therapy works somehow makes it less credible or acceptable. Phenomenology and ethnography work in combination to explain the non-quantifiable elements that cause horse therapy to impact health and well-being for special needs individuals in quantifiable ways. Few medical therapies, services, and medications of any kind carry the same success rates and reputation that horse therapy has. Horse therapy has the potential to change lives and improve communities – special needs families face enough disadvantage and deal with enough challenges already. Accessibility begins with academia and public health professionals being more open to the idea of horse therapy and understanding the non-quantifiable ways in which it works, which I hope to have explained here.

Accessibility also depends on proper and active dissemination, which will be pursued with reverence. I experienced opposition to horse therapy first hand, not just as a student

researcher, but also as a participant and a volunteer with experience in the field. The effects of this opposition can be devastating. Many of the participants in this study explained various ways in which their lives would be affected, should their horse therapy sessions cease. One local center closed because acceptance did not arrive in time, and it is unknown if its participants were able to access therapy elsewhere. There is an immense amount of good horse therapy can accomplish – given the amount of people and ways it can be used to help and heal – it is a public health initiative by definition and substance alone. As one participant explained, horse therapy makes communities better one person at a time. Therefore, on a public health level, horse therapy can make entire regions, counties, states, and provinces better, one community at a time.

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Appendix A: Raw Coding on Horse Therapy, Health, and Well-Being

Accomplishment.
Accomplish goals.

Achievement.
ADHD sensory input (provides).
Adoptive and birth family participation.
Aggression (reduces).
Allergies (some children are allergic to horses – disadvantage).
Ambulatory.
Anxiety (controls and reduces).
Attention (provides in positive ways).
Balance (creates, develops, improves).
Behavior (improves, better control of).
Body workout (that cannot be obtained from a wheelchair).
Bonding with staff, volunteers, other riders (creates, develops, and encourages).
Calming.
Calm horses.
Calms the nervous system.
Challenging/Rising to the challenge.
Cold weather (disadvantage – centers often close down for winter because of no heated arenas)
Community socialization and networking.
Company of horses (enjoyment of grooming, tacking, feeding treats, ethnography, phenomenology).
Compassion (creates, develops, improves – horse-led).
Compete with horses (some riders get good enough to enter competition).
Concern for horses (not wanting to spook the horses creates self-awareness, calmness).
Confidence in self and ability (develops and improves).
Confidence with animals/horses (develops and improves).
Confidence with/working with others (develops and improves).
Conversation starters (horses and riding provide unique skills and experiences).
Coordination.
Coping (creates, develops, improves).
Core strength (creates, develops, improves).
Desire to participate.
Desire to socialize.
Difficulty with new staff or volunteers (for some children – disadvantage).
Disadvantageous to a child forced to stop (due to funding, accessibility, availability).
Diversity (introduces, celebrates).
Diverse needs (some therapy centers struggle to meet each participant's needs – disadvantage).
Diversified trainers (horse therapy centers need diversified instructors to meet everyone's needs).
Easier to "open up" with/using horses.
Eating (increases).
Eliminates the need for a wheel chair.
Emotional improvement.
Emotional reserves (builds).
Emotional stability (creates, develops, and improves).
Endurance.
Engaging activity.

Environment (welcoming, non-judgmental, understanding, patient, encouraging – result of volunteers).
Exciting.
Excel at a sport.
Eye contact (develops and improves).
Exercise (without realizing it, horses provide numerous ways to exercise).
Facilitates activity.
Family activity.
Family bonding.
Family interaction (creates, develops and improves ability).
Family support (creates, develops, improves).
Family time (provides an outlet for bonding with new partners, extended family, etc.)
Forming relationships with a horse helps learn about forming relationships with humans.
Freedom (feelings, senses - phenomenology).
Free of disability on a horse.
Friendship (with horses, other participants, other families, staff, and volunteers).
Frustration with lack of advanced horses (for more advanced/capable riders – disadvantage).
Fun.
Function (develops and improves overall mental and emotional function of child).
Future career (inspires, provides experience, teaches).
Gentle horse.
Group lessons (puts like children together and allows parents to support and share with each other).
Hand strength (develops and improves).
Hard work (positive attribute).
Horse bond connection (profound, special, unique).
Happiness (creates, develops, improves).
Hope (creates, develops, improves).
Horses adapt and interact with each child in a special and unique way.
Horses as a hobby/passion.
Horses as friends/lifelong friends.
Horses heal.
Horses offer unique metaphors for life's challenges which allows for introspection.
Impact (horses show what impacts thoughts, feelings, and behavior has on others).
Impresses people.
Impulsivity (control and decreases).
Inclusive activity.
Independence (a result of the phenomenology of horses and ethnography of trained staff).
Interactions with horses.
Interactions with others (riders, staff, volunteers).
Involvement at the barn (positive feelings of inclusion, grooming, tacking up, helping with chores).
In control of the horse.
Jealous siblings (positive factor; riders/participants enjoy and excel at a special activity others dearm of).
Joy.
Lack of funding limits accessibility.
Learn about yourself.

"Leaving the wheelchair."
Leg strength (develops and improves).
Life lessons (instills, provides, teaches).
Life motivation.
Limited access to horses (can cause depression).
Limited access to horses (lack of heated arena/coldness, cost, long drive, lack of research, funding).
Love of horses.
Low impact sport.
Makes a difference.
Manages feelings.
Mental health (positive, gain).
Mindfulness (creates and develops an awareness of self, feelings, and impact on others).
Moods (creates more positive ones).
Motion of the horse.
Non-certified centers give horse therapy a bad name.
Non-judgmental (horses, staff, riders, and other families – provide acceptance).
Normalcy (children feel normal in an environment that is tailored to them).
No disadvantages (some participants claim there are no disadvantages to horse therapy).
No social demands.
Organization (teaches and improves).
Outgoingness (increases).
Overcome fears.
Ownership (children feel like their horse is their own and that something belongs to them).
Pain coping (develops).
Parapalegic man is able to ride independently.
Parents are relieved (because their children can excel and are setup for success).
Parents can enjoy watching their children thrive and excel on horses with qualified staff.
Parents do not worry because children are safe and well-supervised with volunteers).
Parents feel safe and have peace of mind with trained horses and volunteers.
Parental satisfaction (parents like to see their children happy, successful, and excelling).
Participation.
Patience (in general, improves).
Patience with annoying sensations.
Patient horses.
Peer acceptance at school.
Personal growth.
Posture (improves).
Prevents muscle loss.
Prevents pneumonia.
Prevents systematic affliction/hospitalization.
Progress (instills positive feelings of)
Provides a sense of responsibility.
Provides coping tools.
Provides new opportunities.

Public health initiative.
Quality of life (improves).
Resiliency.
Reins (ethnography).
Relaxing/relaxation.
Reluctant to participate/try new things (reduced).
Rewarding.
Rewarding for all involved.
Riding risk (disadvantage).
Rural areas (limited access to horse therapy – disadvantage).
Saddlework (ethnography).
School noticed a decline in anxiety and quirks like stammering.
Scoliosis curve (improves).
Self-awareness (develops and improves).
Self-care (develops and improves).
Self-control (develops, improves, maintains).
Selflessness (encourages, improves, maintains).
Sense of belonging.
Sense of feeling included.
Sense of self (develops and improves, patience with annoying sensations).
Shatters stigma about therapy for patients and peers.
Smiling.
Social connections between riders and participants to others and between families.
Social skills (develops and improves).
Social support.
Socialization – external (creates, develops, and improves).
Socialization - internal (creates, develops, and improves).
Something to look forward to.
Sometimes repetitive (disadvantage).
Soothing-effects of horses.
Special activity.
Stress-relieving.
Success.
Sustained training, lessons, and techniques (lead to life skills and can translate to a horse career).
Tailored sessions address each child's unique needs and target issues.
Talking (develops, improves, stimulates).
Tolerance (creates, develops, improves).
Train horses (some riders/participants get good enough to help train future therapy horses).
Unconditional acceptance from horses.
Unconditional love from horses.
Understand personal feelings/behavior from horse interaction and reflection.
Understanding environment.
Volunteers ("positive attitudes and kind, gentle, supportive way").
Walking (helps and improves).

Well-being (physical, mental, social).
Whole day is ruined if horse therapy session is missed.
Work ethic (develops).
Worry about affording it.
Would need a wheelchair if riding stopped.

Appendix B: Raw Coding on Horse Therapy Center Ecology

Animal husbandry/stewardship.

Barn chore and horse management staff are crucial to horse therapy centers.
Brings communities together.
Biosecurity management prevents harmful spread of micro-organisms.
Certification can be expensive (up to $1,200.00 per instructor).
Communities benefit.
Communities can provide volunteers, funding, promotion, donations.
Community accomplishment.
Community/city hall involvement with public fundraising and promotion programs.
Environment benefits.
Funding can come from government grants, individual sponsors, CANTRA and Equine- Canada.
Funding is a challenge.
Good for the economy (high demand for local products and services).
Good use of land/land management.
High costs and resources for starting/operating horse therapy centers.
Horses that need to be replaced (due to age, injury, etc.) can be a challenge to sort out.
Horses benefit because they have a job/purpose.
Horses benefit because they are taken care of by certified and capable staff and volunteers.
Manure can be considered pollution or be repurposed.
Minimal land requirements to keep horses.
Nature/environment is protected.
Need advocating for OHIP to cover costs.
No negative impacts to the community.
Production of hay and grain provides income for local farmers.
Properly handled manure helps farmland and crops.
Resources (many are needed to keep horse therapy farms running).
Running costs.
Taxes.
Trained horses are crucial to horse therapy centers.
Trained staff and volunteers (and annual renewals) are crucial to horse therapy centers.
Volunteers that stay committed are a challenge to find.
$25-$50 fee per session.